

Effective countermeasures against conventional war and terrorist threats. Objective evidence of nuclear deterrent capabilities to bring world peace by ending conventional warfare, and protection against collateral civilian damage and contamination in conventional, chemical and nuclear attack.

- Hiroshima's air raid shelters were unoccupied beca...
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Monday, July 13, 2015

Hiroshima's air raid shelters were unoccupied because Japanese Army officers were having breakfast when B29s were detected far away, says Yoshie Oka, the operator of the Hiroshima air raid sirens on 6 August 1945

"Compared to notorious killers like driving, smoking or drinking, nuclear risks – though objectively carrying little danger in their modern deployments – stir the deepest fears ... we are being bombarded with cosmic radiation ... 6.2 millisieverts (mSv) of radiation a year ... Familiar risks like car accidents, though far more likely to kill people, are still better accepted. ... About 35 years ago ... the nuclear industry approached Fischhoff, who is now a professor of decision science at Carnegie Mellon University ... He found an industry that struggled to explain, without condescension or untoward complexity ... "The nuclear industry had done a terrible job communicating the facts ..." Fischhoff said ... "It continues to do a horrible job of communicating." ... call-backs to **Hiroshima and Nagasaki** are frequent, for good reason – and they seriously stigmatize the industry, in the psychological sense of the word, said David Ropeik, a former television reporter ... "We have a particularly good memory for the scary stuff," Ropeik added. ... During his work as a television reporter, he reported on nuclear power plants like they were a "second Satan" for two decades, he said. ... "We have very little ... that will make it clear to people what's going on in a **credible** way," Fischhoff said."

– Paul Voosen, *Humans “Wired” for Terror Over Remote Radiation Threats*, New York Times, 18 March 2011.

What Fischhoff should do, is start the rebuilding with the foundation, Hiroshima.

What the media will not publish

TRUTH ABOUT HIROSHIMA AND NAGASAKI LEUKEMIA: http://www.rerf.jp/radefx/late_e/leukemia.html

Observed and estimated excess number of leukemia deaths in LSS population, 1950-2000				Excess risk of developing solid cancers in LSS, 1958-1998				THE MAJORITY OF ALL FORMS OF CANCER DEATHS IN HIROSHIMA AND NAGASAKI WERE FROM NATURAL CANCERS, NOT NUCLEAR WARFARE.
Weighted marrow dose (Gy)	Subjects	Deaths		Weighted colon dose (Gy)	LSS subjects	Cancers		
		Observed	Estimated excess			Observed	Estimated excess	
0.005 - 0.1	30,387	69	4	0.005 - 0.1	27,789	4,406	81	
0.1 - 0.2	5,841	14	5	0.1 - 0.2	5,527	968	75	
0.2 - 0.5	6,304	27	10	0.2 - 0.5	5,935	1,144	179	
0.5 - 1.0	3,963	30	19	0.5 - 1.0	3,173	688	206	
1.0 - 2.0	1,972	39	28	1.0 - 2.0	1,647	460	196	
>2.0	737	25	28	>2.0	564	185	111	
Total	49,204	204	94	Total	44,635	7,851	848	

TRUTH ABOUT HIROSHIMA AND NAGASAKI SOLID CANCERS: http://www.rerf.jp/radefx/late_e/cancrisk.html
 RERF (Radiation Effects Research Foundation) joint Japanese-American surveys of Hiroshima and Nagasaki

“I’m assuming everyone knows that [Richard] Broinowski is Helen Caldicott’s brother and so he’s just another mouthpiece for her misinformation ... Caldicott is not a radiation scientist who has spent countless hours studying the effects of radiation on people. She’s ... someone who has made a name for herself by making outrageous, unsubstantiated claims about nuclear power. ... she’s held up as some fount of all nuclear wisdom we need to tell people the truth about her.” (Terry Krieg, 22 February 2012.) [This is unhelpful, because it lacks specific examples of their agenda, so it backfires.]

We have to be sure our facts about nuclear power are right, as the latest exchange with Helen Caldicott shows.

By George Monbiot. Published on the *Guardian*’s website, 13th April 2011

"My request to Helen Caldicott was a simple one: I asked her to give me sources for the claims she had made about the effects of radiation. Helen had made a number of startling statements during a television debate, and I wanted to know whether or not they were correct. ...

"At first I asked for general sources for her claims. She sent me nine documents: press releases, newspapers articles and an advertisement. Only one of them was linked to a scientific publication, the BEIR VII report published by the National Academy of Sciences. She urged me to read it. I did so and discovered that, far from supporting her claims, it starkly contradicts them. For example, it says:

- The risk of radiation-induced mutations ... “is sufficiently small that it has not been detected in humans, even in thoroughly studied irradiated populations such as those of Hiroshima and Nagasaki.”

- Regarding transmissible genetic damage from the exposure of future parents, such as “spontaneous abortions, congenital malformations, neonatal mortality, stillbirths, and the sex ratio of offspring ... there is no consistent evidence of an association of any such outcomes with exposure to environmental sources of radiation.”

- “On balance, the existing evidence does not support the conclusion that rates of childhood leukemia have increased as a result of radiation exposures from the Chernobyl accident.”

"I began to wonder whether Helen has actually read this report, or was hoping that, at 423 pages, it would scare me away. ... She claimed that isotopes of krypton, xenon and argon “can mutate the genes in the eggs and sperm and cause genetic disease.” When I asked her for a source, she told me, “This is also described in my book.” In fact her book says (page 55): “There have never been any epidemiological studies performed on the effects of exposure to the noble gases xenon and krypton.” This flatly contradicts her own claim. When I pressed her for better sources, her publishers wrote to me and said she did not have time to find them. Now she has had time – **time enough to write an article for the Guardian attacking me** – but still hasn’t supported the claims I questioned.

"Then she appears to suggest that iodine-131 can “continuously irradiate small volumes of cells ... over many years”. As it has a half life of 8 days, this seems unlikely. ... Then she makes a remarkable allegation. As a result of a conspiracy hatched with the International Atomic Energy Agency, since 1959 the World Health Organisation has “made no more statements on health and radioactivity.” This is completely false ... the WHO currently runs an **Ionizing Radiation Programme** and a Radiation and Environmental Health Programme It has set up an **International Research Advisory Committee** “to identify gaps and under-discovered areas on health effects from low-dose exposures to ionizing radiation”. In 2006 it published a 167-page report titled **Health Effects of the Chernobyl Accident**. As for the alleged conspiracy, this is a story that has been circulating among anti-nuclear campaigners for many years, becoming ever more lurid. ... This is what happens when we fail to be as sceptical about the ideas we like as we are about the ideas we don’t. Incidentally, Helen has still not provided a shred of evidence for her claim that the recent report by another UN agency – the UN Scientific Committee on the Effects of Atomic Radiation – into the Chernobyl disaster is “a total cover-up”. Twice I have asked her to substantiate this allegation; twice she has replied with accusations about the WHO. Is she aware that these are different agencies?

"But perhaps most alarming is her continued reliance on the report by Alexey Yablokov, Vassily Nesterenko and Alexey Nesterenko, which claims that 980,000 people died as a result of Chernobyl. As its critics have pointed out, this figure cannot possibly be correct, as it arises from the extraordinary assumption that all increased deaths since 1986 from a host of diseases – including many which have no known connection with radiation – were caused by Chernobyl. The report has not been peer-reviewed and the academy which published it has distanced itself from it.

"Continuing to **use such a severely flawed document for your central claims about the health impacts of radiation hardly inspires confidence**. ... I think these points are worth making, for several reasons. I believe that journalists should not stand by while misinformation is spread. If there is any value in journalism, it lies in trying to winnow fact from fiction, and helping people to form a more accurate view of the world. If, on the basis of falsehoods and exaggerations, we make the wrong decisions, the consequences can be momentous. ...

"What if, for example, the continuing dangers of radioactive pollution for the people in the nations around Chernobyl have been so greatly exaggerated that they have been exposed to 25 years of unnecessary terror and distress? What if this has caused serious and widespread psychological problems, as the UN Scientific Committee suggests (Page 513)? What if we have exploited vulnerable people – those born with deformities and genetic diseases – by parading their conditions as examples of the damage radiation has done, when the evidence suggests that they are not? What if the same burdens are inflicted on the people of Japan?

"If that has happened, is it not a terrible thing to bear? Don’t we have a duty to interrogate ourselves as scrupulously as we can to ensure that we have not and will not do such a thing? ... If we spread misinformation, we could inadvertently achieve the opposite."

Journalists did that long ago, starting with misinformation published widely after Hiroshima, 1945.

If the Hiroshima population had been in their air raid shelters, over 99% could have survived the 16 kt explosion (survival data for Hiroshima and Nagasaki from Dirkwood researchers and others linked here justify a protection factor of at least 25 or more for shelters, reducing mortality in Hiroshima from 25% to 1% or less; additionally, Glasstone and Dolan 1977 point out that the median lethal range in concrete buildings was 0.12 mile compared to 1.3 miles outdoors, which is a difference in median lethal areas and in casualties by over a factor of 100). This fact is little changed when

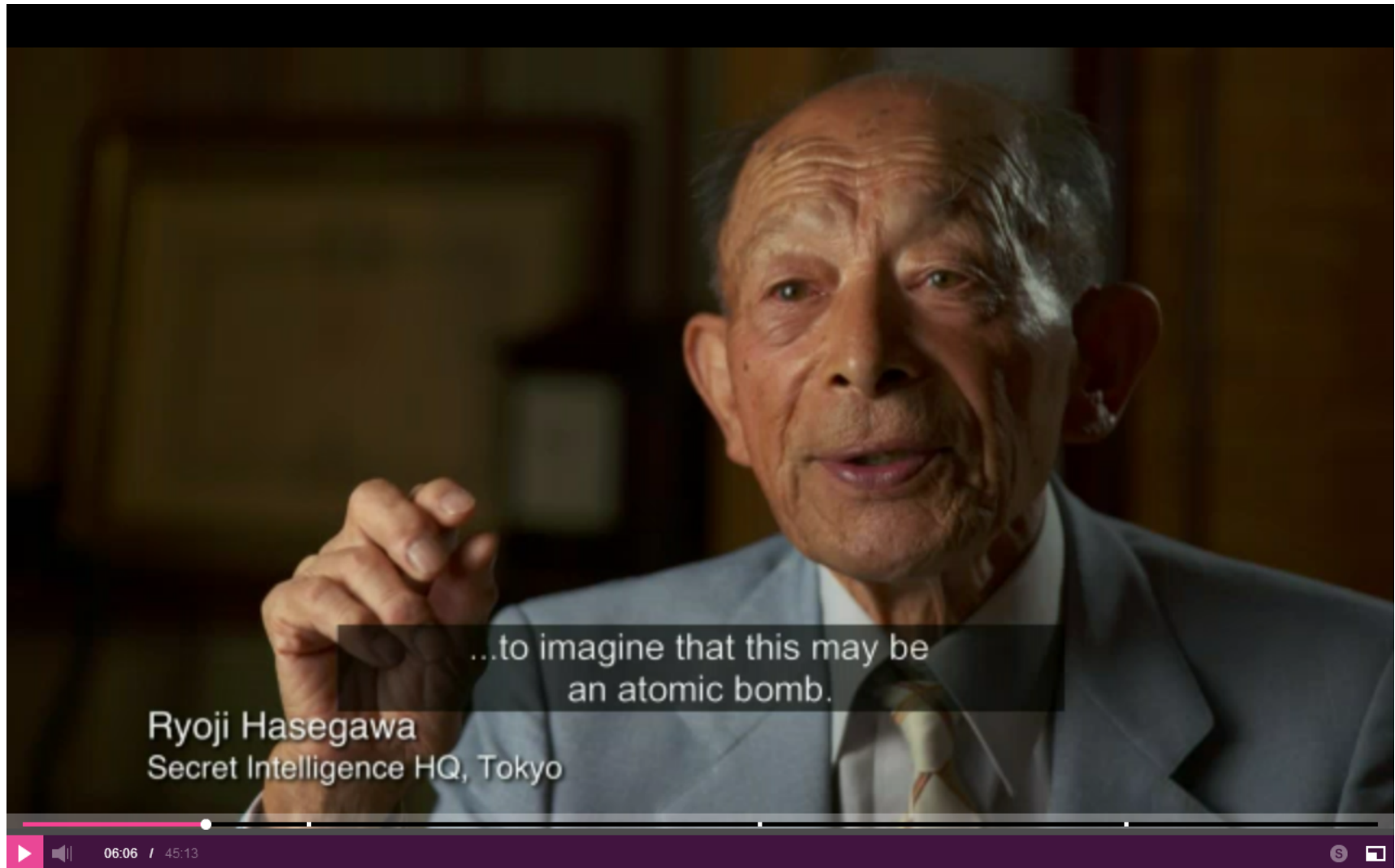
the yield increases, contrary to the usual direct scaling propaganda, since a modern MIRV warhead of say 160 kt yield actually blasts a median lethal area that is bigger by only about the 2/3-power of yield, hence giving a casualty amplification factor of $10^{(2/3)} = 4.64$, which implies a survival fraction of $0.99^{(4.64)} = 0.95$ or 95% survival. But the popular science fiction based quack media anti nuclear propaganda *completely ignores all these facts*.

As it was, despite not being in their shelters, 75% of the population of Hiroshima survived, making a fast recovery.

What about solid cancer tumors? During the period from 1958-98, in 44,635 survivors, 7,851 malignancies (first primary) were observed, of which 848 were due to radiation (10.7% due to radiation). Almost 90% of these cancers were *not* due to radiation, but were natural cancers (RERF). What about the blood cancers, leukemia? From 1950-2000 in 49,204 survivors there were 94 leukemia deaths due to bomb radiation (RERF data).



Ryoji Hasegawa of Japanese Secret Intelligence Headquarters, Tokyo, monitored the B29 Enola Gay's call sign, correlating it with other information (the weather planes that flew over the target before hand, etc.) and worked out it was on a special mission to drop a new weapon, probably an atom bomb, on Hiroshima. PICTURE CREDIT: He is interviewed in the 6 July 2015 Channel 5 program, *Hiroshima: the Aftermath*.





Yoshie Oka then detected the approached B29s with the atomic bomb in her station in the military headquarters bunker, just north of Hiroshima Castle. However, she needed to report her findings to senior officers for them to authorize another blast of the Hiroshima air raid sirens to get the people into their numerous air raid shelters again (as the U.S. Strategic Bombing survey documented, there were false alarms hours earlier when the weather survey plane ahead of Enola Gay flew over the city). This time, Yoshie Oka was left waiting. All senior officers were having breakfast. Finally, at 8:13am - just 2 minutes before the explosion - she got the authorization to sound the sirens. She did not manage to do this before the explosion. **This explains the disaster at Hiroshima for the first time. The shelters survived and shielded the blast, heat and radiation. People were not in them due to the failure of the administration of the civil defense warning system. The harm done to civil defense by a handful of anti-truth, anti-fact, anti-deterrence, deceitful, fear-mongering, war-continuing "journalists" who abuse their position of trust and authority, is the real crime against understanding truth in the story of Hiroshima.**











Color view of the Hiroshima ground zero area after the 6 August 1945 nuclear attack. Many of these brick and concrete buildings survived the explosion, were evacuated by survivors before the firestorm (fires in wooden houses merged after 20 minutes and reached peak intensity 2-3 hours afterwards), and were later burned out by firebrands landing through broken windows, if there was nobody inside to extinguish them.

The popular CND-hyped myth that the city was vaporized in a nanosecond or so just doesn't survive a reality check: in the Bank of Japan near ground zero, survivors remained right through the surrounding firestorm, extinguishing the few firebrands that were blow in, using water buckets.

The National Archives
HO 225 /121

HOME OFFICE

CH/GA 121

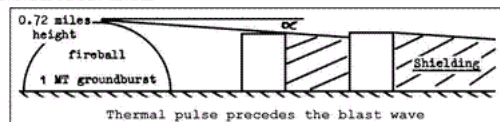
SCIENTIFIC ADVISER'S BRANCH

(Paper at Tripartite Thermal Effects Symposium, Dorking, October 1964)

IGNITION AND FIRE SPREAD IN URBAN AREAS FOLLOWING A NUCLEAR ATTACK

G. R. Stanbury

INITIAL FIRE INCIDENCE



Assuming that buildings on opposite sides of a street which is receiving heat radiation from a direction perpendicular to its length are of the same height we take the average depth of a floor to be 10 ft.

Effect of Shielding: Estimation of the number of exposed floors

Distance from explosion miles	Angle of arrival α°	Width of street (units of 10 ft.)						
		2	3	4	5	6	7	8
3	13½	.5	.5	1	1	1.5	1.5	2
4	10	.5	.5	.5	1	1	1.5	1.5
5	8	.5	.5	.5	.5	1	1	1

SPREAD OF FIRE

From last war experience of mass fire raids in Germany it was concluded that the overall spread factor was about 2; i.e. about twice as many buildings were destroyed by fire as were actually set alight by incendiary bombs

Number of fires started per square mile in the fire-storm raid on Hamburg, 27th/28th July, 1943		
102 tons H.E.	48 tons, 4 lb. magnesium	40 tons, 30 lb. gel.
100 fires	27,000 bombs	3,000 bombs
	8,000 on buildings	900 on buildings

SECONDARY FIRES FROM BLAST DAMAGE IN LONDON

Fire situation from 1,499 fly bombs in the built-up part of the London Region

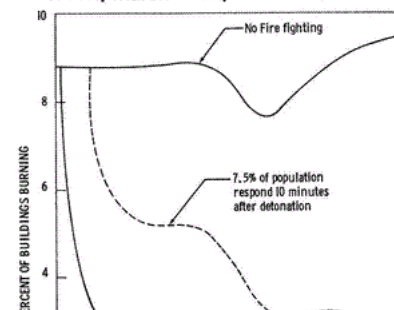
(Fires from 1 ton TNT V1 cruise missiles, 1944)

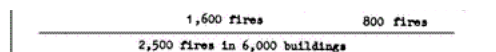
	Number of fly bombs	Fly Bombs Caused				
		No fire	Small fire	Medium fire	Serious fire	Major fire
Grand Totals	1,499	804	609	75	7	4

The large proportion started no fires at all even in the most heavily built-up areas.

All these fly bombs fell in the summer months of 1944 which were unusually dry. In winter in this country in residential areas there are many open fires which may provide extra sources of ignition. The domestic occupancy is a low fire risk however, and as the proportion of such property in the important City and West End areas is small this should not introduce any serious error. Moreover, in winter, the high atmospheric humidity and the correspondingly high moisture content of timber would tend to retard or even prevent the growth of fire.

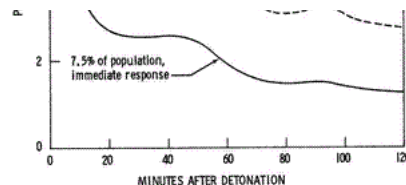
Takata, A.N., Mathematical Modeling of Fire Detenses, IITRI, March 1970, AD 705 388.





However, the important thing to note is that the total number of fires started in each square mile (2,500) was nearly half that of the total number of buildings; in other words, almost every other building was set on fire

When the figure of 1 in 2 for the German fire storms is compared with the figures for initial fire incidence of ~ 1 in 15 to 30 obtained in the Birmingham and Liverpool studies it can only be concluded that a nuclear explosion could not possibly produce a fire storm.



FIRESTORMS IN MODERN CITIES: DEBUNKED 1964

THE EFFECTS OF THE ATOMIC BOMBS AT HIROSHIMA AND NAGASAKI



REPORT OF THE BRITISH MISSION TO JAPAN

PUBLISHED
THE HOME OFFICE AND THE AIR MINISTRY BY
HIS MAJESTY'S STATIONERY OFFICE
LONDON



Photo No. 17. HIROSHIMA. Typical, part below ground, earth-covered, timber framed shelter 300 yds. from the centre of damage, which is to the right. In common with similar but fully sunk shelters, none appeared to have been structurally damaged by the blast. Exposed woodwork was liable to "flashburn." Internal blast probably threw the occupants about, and gamma rays may have caused casualties.

40. The provision of air raid shelters throughout Japan was much below European standards. Those along the verges of the wider streets in Hiroshima were comparatively well constructed: they were semi-sunk, about 20 ft. long, had wooden frames, and 1 ft. 6 ins. to 2 ft. of earth cover. One is shown in photograph 17. Exploding so high above them, the bomb damaged none of these shelters.

41. In Nagasaki there were no communal shelters except small caves dug in the hillsides. Here most householders had made their own backyard shelters, usually slit trenches or bolt holes covered with a foot or so of earth carried on rough poles and bamboos. These crude shelters, one of which is shown in photograph 18, nevertheless had considerable mass and flexibility, qualities which are valuable in giving protection from blast. Most of these shelters had their roofs forced in immediately below the explosion; but the proportion so damaged had fallen to 50 per cent. at 300 yards from the centre of damage, and to zero at about $\frac{1}{2}$ mile.

42. These observations show that the standard British shelters would have performed well against a bomb of the same power exploded at such a height. Anderson shelters, properly erected and covered, would have given protection. Brick or concrete surface shelters with adequate reinforcement would have remained safe from collapse. The Morrison shelter is designed only to protect its occupants from the debris load of a house, and this it would have done. Deep shelters such as the refuge provided by the London Underground would have given complete protection.



Photo No. 18. NAGASAKI. Typical small earth-covered back yard shelter with crude wooden frame, less than 100 yds. from the centre of damage.

Firestorms in modern cities debunked 1964



Hiroshima cloud seen from ground level: the stem and fireball are separated due to the height of burst. By the time fireball soot rainout started, 2 hours later, the mushroom with most of the radioactivity, had been blown many miles downwind from Hiroshima, explaining why there was **no significant fallout** ([click here for Hiroshima fallout map](#); note that the doses are insignificant compared to natural background radiation over the period for long term effects):

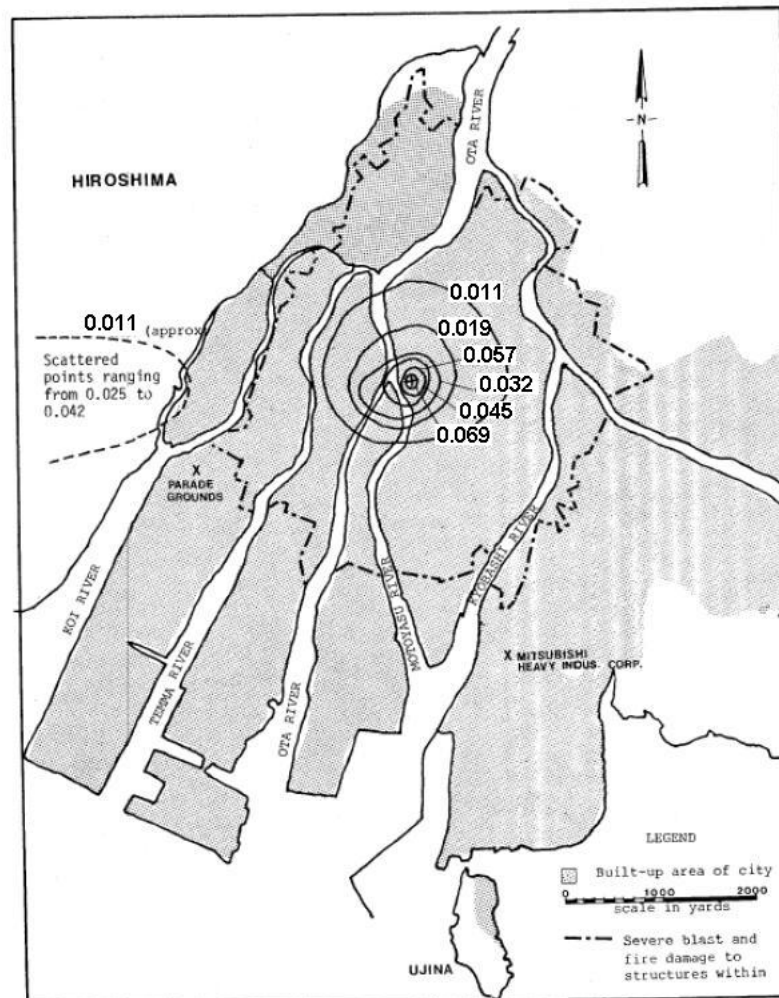


Figure 1. Results of the Naval Medical Research Institute (NMRI) survey performed in Hiroshima on November 1-2, 1945, showing residual radiation levels of 0.069 milliroentgen per hour (mR/hr) in the vicinity of ground zero⁵ and 0.011 mR/hr at the outermost contour. Source: DNA 5512F.

⁵ The NMRI survey report (Measurement of the Residual Radiation Intensity at the Hiroshima and Nagasaki Atomic Bomb Sites, NMRI-160A) documents a residual exposure rate of 0.081 mR/hr at the hypocenter, as well as spot measurements of 0 and 9 mR/hr among the "scattered points" to the west of the city center. These values are not represented on the map in DNA 5512F.



Hiroshima fireball and cloud stem are separate when first filmed from a B29 observation aircraft. By the time the stem entered the fireball, it had cooled below the condensation temperature of most fission products, so little contaminated dust was produced. Significant fallout requires surface bursts or thunderstorms.



Modern city buildings made of concrete did not blast or burn down, unlike the predominant wooden buildings in Hiroshima. Recovery was very rapid.



Modern buildings survive proximity to a nuclear explosion, central Hiroshima, 1945. The multistory building in the centre is the famous Hiroshima *Chugoku Shimbun* newspaper office.

Robert Jungk carefully investigated the history of the recovery in Hiroshima by interviewing the people involved and collecting first hand reports, and gives further interesting details in his book *Children of the Ashes* (Heinemann, London, 1961):

1. On 31 August 1945: 'the first locally produced and locally printed post-war edition of the *Chugoku Shimbun* was on sale in the streets of Hiroshima ... 'Our darkroom was an air-raid shelter dug into the hillside [which survived of course]', one of the editors remembers, 'but our type had to be cast in the open air, under the sunny sky.'

2. On 7 September 1945, the *Chugoku Shimbun* reported that Hiroshima then had a population estimated to be 130,000.

3. On 10 September 1945, electricity was reconnected to some parts of Hiroshima: 'huts made of planks quickly knocked together ... already had electric light.'

4. On 5 November 1945, the *Chugoku Shimbun* reported that - despite inertia and delays due to 'the rigidity of bureaucratic procedure' which was hindering the recovery rate - a lot of progress was being made:

'Housing. The building of houses is to be systematically begun on 15 November. ...'Tramways. At present, ten trams are in commission on the main route, eight on the Miyajima route and five municipal buses. These twenty-three vehicles must cater for an average of 42,000 persons daily.

'Some 70% of the destroyed buildings of Hiroshima had been reconstructed by mid-1949.' (Source: Research Department, Hiroshima Municipal Office, as cited in Hiroshima, Hiroshima Publishing, 1949. Other recovery data are given in U.S. Strategic Bombing Survey, *The Effects of Atomic*

Bombs on Hiroshima and Nagasaki, Washington, D.C., 1946, p. 8.)

Journalism on nuclear war has changed since the 1945 *Chugoku Shimbun*. The consensus now allows editing *all of the facts out of a newspaper*, leaving superstitions, anecdotal fear mongering:







Trains resume almost immediately in Hiroshima.



Cleaning up debris in Hiroshima, prior to rebuilding work.



Modern bridges and modern steel/concrete buildings survived even close to ground zero. The aiming point for the bomb a T-shaped bridge in the centre of the city. It survived.



Trade is soon restored in Hiroshima.



75% of the population of Hiroshima survived, most making a full recovery. What about solid cancer tumors? During the period from 1958-98, in 44,635 survivors, 7,851 malignancies (first primary) were observed, of which 848 were due to radiation (10.7% due to radiation). Almost 90% of these cancers were *not* due to radiation, but were natural cancers (RERF). What about the blood cancers, leukemia? From 1950-2000 in 49,204 survivors there were 94 leukemia deaths due to bomb radiation (RERF data).

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1.0 - 2.0	1,972	39	28
>2.0	737	25	28
Total	49,204	204	94

Excess risk of developing solid cancers in LSS, 1958-1998

Weighted colon dose (Gy)	LSS subjects	Cancers	
		Observed	Estimated excess
0.005 - 0.1	27,789	4,406	81
0.1 - 0.2	5,527	968	75
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0.5 - 1.0	3,173	688	206
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RERF (Radiation Effects Research Foundation) joint Japanese-American surveys of Hiroshima and Nagasaki



Thermal flash scarring only on side facing bomb. Any duck and cover prevents this. Yoshie Oka's superiors prevented the air raid warning being sounded because they were all having breakfast together, with no one senior on duty.



DAILY EXPRESS 

No. 14,119 Lighting-up: 8.39 pm to 5.20 am WEDNESDAY SEPTEMBER 5 1945 Weather: Dull, cool One Penny

30th DAY in Hiroshima: Those who escaped begin to die, victims of—

THE ATOMIC PLAGUE

'I write this as a warning to the world'

DOCTORS FALL AS THEY WORK

Poison gas fear: All wear masks

Express Staff Reporter **PETER BURCHETT**

was the first Allied reporter to enter the atom-bomb city. He travelled 400 miles from Tokyo alone and unarmed, carrying ration for seven meals—food is almost unobtainable in Japan—a black umbrella, and a typewriter. Here is his story from—

HIROSHIMA, Tuesday.

IN Hiroshima, 30 days after the first atomic bomb destroyed the city and shook the world, people are still dying, mysteriously and horribly—people who were uninjured in the cataclysm—from an unknown something which I can only describe as the atomic plague.

Hiroshima does not look like a bombed city. It looks as if a monster steamroller had passed over it and squashed it out of existence. I write these facts as dispassionately as I can in the hope that they will act as a warning to the world.

3,320,173 AMAZES

THE PICTURE THAT DOES NOT TELL THE WHOLE STORY



The big switch: 'Over by spring'

By FREDERICK CHAND

UNDEFEATED present demobilisation plans it is expected that industry's switch from war to peace conditions will not be

4.30 A.M. LATEST

PRISONERS RUN JAP CITIES

KYOTO, Tuesday.—A batch of 100 prisoners arrived here today from a camp 100 miles away. Prisoners of war, without carrying the official word of surrender, moved out from their

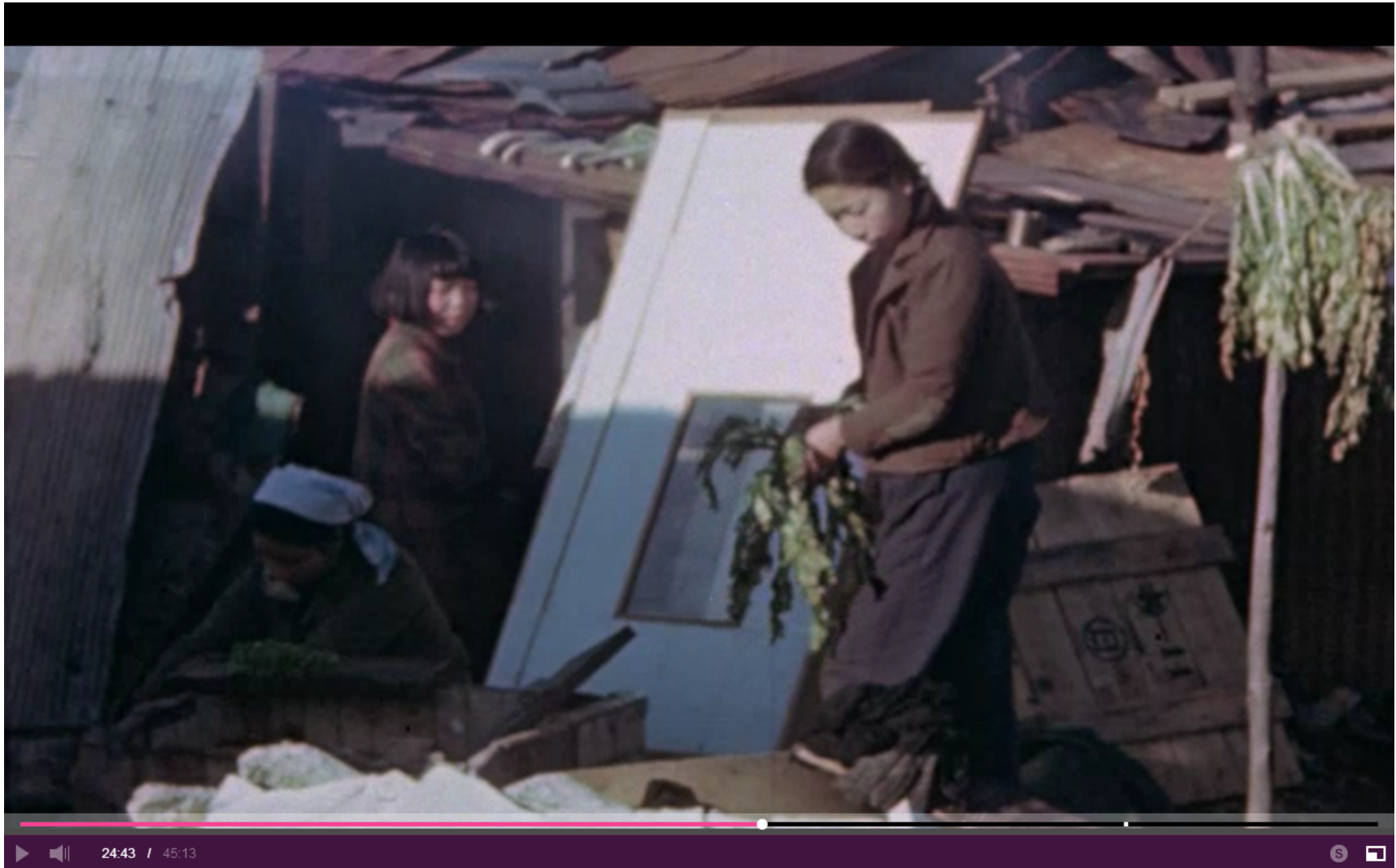
Nuclear weapons effects secrecy allowed **Stalin's (Burchett's) myths** to circulate: for the air bursts on Japan the radiation dose was received in 20 seconds, causing a minimum in white blood cell count 30 days later. Fallout was trivial in comparison. This has been confirmed by radiation measurements in the cities. **The false correlation between delayed effects and lingering radiation is still loved and claimed to be "uncontroversial journalism" by certain deluded media.**



The crew of the B29 Enola Gay, piloted by Paul W. Tibbets, speeded up the end of the war. Like the Vietnam war decades later, heavy conventional (explosive and incendiary/napalm) bombing actually hardened the will to fight in some quarters.



Rebuilding work in Hiroshima. A majority of homes were rebuilt within 4 years.



Makeshift homes in Hiroshima, employing surviving debris outside the firestorm.



Hiroshima recovered fast from nuclear attack, beginning within days of the explosion with trams, trains, and electricity restored in some areas, even before any help from outside arrived:



Hiroshima power lines were repaired, soon after nuclear explosion.



Trams operation was restored in Hiroshima within days of nuclear attack.



ABOVE: Yoshie Oka in Hiroshima identified the B29 bombers and passed on a report to her seniors in time to get the people of Hiroshima into their air raid shelters, most of which proved to survive intact against a 16 kt nuclear air burst at 600 metres, but the officers were taking breakfast, and she only received the order to start the complex sequence needed to sound the public air raid sirens at 8:13 am, two minutes before the explosion. She was still trying to get the air raid alarm out when the bomb went off with a flash.



Even without air raid shelters (which survived close to ground zero in Hiroshima), many modern buildings near ground zero, made of brick or concrete, did offer protection from blast winds, heat flash, and radiation shielding. This is a fact applicable to civil defense considerations today, even without special shelters.



The documentary *Hiroshima: the Aftermath* unlike previous Cold War propaganda on the subject, at least makes some admission of the rapid recovery from nuclear warfare!

John Hersey's 1946 book *Hiroshima* summarizes the rapid recovery thus:

"In Hiroshima, all utilities and transportation services were disrupted for varying lengths of time. In general however services were restored about as rapidly as they could be used by the depleted population. Through railroad service was in order in Hiroshima on 8 August, and electric power was available in most of the surviving parts on 7 August, the day after the bombing. ... Rolling transportation suffered extensive damage. The damage to railroad tracks, and roads was comparatively small, however. The electric power transmission and distribution systems were badly wrecked. The telephone system was approximately 80% damaged, and no service was restored until 15 August."

This is confirmed by other studies of the rapid recovery of Hiroshima, before significant help arrived.





BANK OF JAPAN BUILDING AFTER ATTACK ON HIROSHIMA

Bank of Japan: USSBS Building 24, 1300 ft from GZ
(Table 5 of USSBS report 92 Hiroshima, v2.)

survivors extinguished fire with water buckets.

Building No.: 24. Coordinates: 5H. Distance from
(GZ): 1,300, (AZ): 2,400.

NAME: Bank of Japan, Hiroshima branch.

CONSTRUCTION AND DESIGN

Type: Reinforced-concrete frame (steel core).

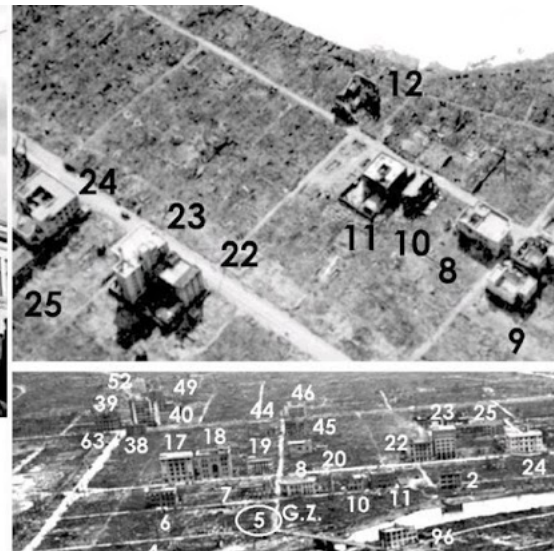
REMARKS: Fire only in room at southwest corner of
second story and in entire third story. No fire in
building right after bomb, but afire at 1000 hours.
Fire in room in second story extinguished with water
buckets.

THANKS TO WATER BUCKET CIVIL DEFENSE ON 6 AUGUST 1945, IT STILL REMAINS IN 2015



CENTRAL DELTA INDEX

www.arch-hiroshima.net/arch-hiroshima/arch/delta_center/nichigin_e.html



U. S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE DIVISION

Field Team No. 1, Hiroshima, Japan

SHEET No. 2

(Fire Supplement to Sheet No. 1)

日本銀行旧広島支店

Former Hiroshima Branch of Nippon Ginko



DATA

- Design: NAGANO Uheiji
- Location: 5-16 Fukuro-machi, Naka-Ku, Hiroshima City
- Purpose of Use: Gallery
- Completed in: Aug 1936
- Total Floor Area: 3214sqm
- Structure: RC
- map (mapion)
- map (Google Map)

This bank building stands in the center of the city. The structure was so sturdy that it survived and retains the original appearance in spite of the proximity of 360 meters from the Hypocenter. It has been preserved the best among all the A-bombed buildings.

It was used as a bank until 1952; Hiroshima City now rents it. It is mainly used as a gallery and visitors are welcome inside during exhibitions.

This was built as a branch of Nippon Ginko, Japan's central bank, in 1936 designed by NAGANO Uheiji. The exterior is in the Renaissance style with Ionic columns. The entrance, which used to have an office area and bank counters, has an expanding space of a vaulted ceiling. The interior ornaments were lost at the time of the A-bombing.

Former branches of Nippon Ginko in Shimane and Okayama have already been renovated into a commercial facility and a music hall respectively, contributing to make downtown more lively. The Hiroshima branch should follow suit soon.





Information

The Former Bank of Japan, Hiroshima Branch was representative of Hiroshima's historical buildings in the early Showa period, with an outstanding classical-style appearance. Despite being exposed to the A-bombing a mere 380 meters from the hypocenter of the A-bomb, thanks to its sturdy structure, the bank still remains it appeared when first built.

Since the armored shutters on the first and second floors were closed at the time of the A-bombing, the interior was not badly damaged. However, the third floor, where the shutters were open, was completely burned. Only two days later, on August 8, 1945, the Bank of Japan reopened for withdrawals and provided space for temporary branches of other financial institutions in Hiroshima City, which had been rendered unable to conduct business. This is an invaluable A-bombing building that conveys its history of support for the reconstruction of Hiroshima from a financial aspect.

In 2000, the building was designated as an Important Cultural Asset by Hiroshima City. Since the same year, Hiroshima City has been offered free rent of this building by the Bank of Japan, and has maintained and managed the facility.



ELECTROMAGNETIC PULSE RADIATION DAMAGE

a. *General.* Permanent damage due to overheating or puncturing of insulation is possible where the electromagnetic pulse energy is high, where the induced voltage triggers an electrical fault and the damage energy is supplied by the affected system, or where the electromagnetic pulse energy is carried for some distance along a cable or line as a power surge.

Interruption of service may occur where the voltage induced in a cable or line causes fuses to blow or circuit breakers to trip. This may take place many miles away from the point of detonation due to transmission of the surge. An interruption could also result if an electronically stored program were subjected to a strong enough transient electromagnetic field to scramble it.

Transient disturbances to electronic systems may occur in several ways. The electromagnetic pulse may be received via the signal or power lines acting as antennae. Or, the low frequency portion of the pulse may penetrate the enclosures and directly induce transient signals in the circuits.

Many instances of all three kinds of damage, i.e., permanent, interruptive and transient, have been experienced. So far, little if any, correlation of damage with measured electromagnetic field strengths has been established. This has been the result of factors previously described, and of uncertainty of the point where electromagnetic pulse pickup actually occurred in cases where many cables and lines were in use for power, signal, control and mechanical purposes.

b. *Power System Damage.* Very regular zero-time tripping of power circuit breakers at a substation more than 30 miles away was observed on one series of tests. Standby personnel were

always posted to reset the breakers to keep electrical equipment functioning. Within a mile of ground zero, pinholes in underground cable insulation have frequently been found. Such cables carried up to 4160 volts.

At power distribution stations, porcelain cut-outs have been observed to arc over and the fuses have often blown. At other stations power transformers have been shorted internally or have had insulating bushings destroyed. Ordinary lightning protective devices provided inadequate protection against the electromagnetic pulse, in those cases.

c. *Signal System Damage.* Damage to signal systems has also been frequent in the form of burned or fused relays, potentiometers, cable insulation and conductors, as well as blown or damaged meters. In many instances, reviews of the circuits have shown that induced energy caused the damage, rather than triggered system energy. Free ends of cable pairs have often arced and melted.

d. *Electronic System Damage.* Oscilloscope presentations have frequently been disturbed or obliterated, even as far as 11 miles from ground zero.

Pulse counters in a timing circuit have been scrambled directly by the induced field (this effect has actually been duplicated in a simulation test in which a 1 mfd capacitor was charged to several thousand volts, then discharged into 10 turns of wire wound around the cabinet). Memory circuits employing magnetic elements may be vulnerable to the magnetic field, H , in a direct manner, as well as to the time derivative of the field.

13-2

Above: the actual Nevada nuclear test EMP effects data in the 1964 *Capabilities of nuclear weapons* page 13-2 is a summary of E.G. & G.'s 1961 secret report by B. J. Stralser, *Electromagnetic Effects from Nuclear Tests*, which describes the EMP effects on tripping circuit breakers over 30 miles away from kiloton yield Nevada tower bursts. Additional EMP data was obtained in the 1962 Nevada surface burst *Small Boy*, a deliberate EMP effects test.

1964 *Capabilities of Nuclear Weapons*, the one which compares American nuclear fallout predictions to the 1956 British *Buffalo Round 2* ground burst nuclear test at Maralinga, Australia, has been kindly emailed to me as a PDF by

Fina Martinez-Myers
702-794-5112

Nuclear Testing Archive
National Security Technologies, LLC
Contractor to the U.S. Department of Energy

Title: TM 23-200/OP NAV INSTRUCTION 03400/C/ AFM 136-1/FMFM 11-2 "CAPABILITIES OF NUCLEAR WEAPONS (U) (1964)

Author(s):

Subject Terms: NUCLEAR WEAPONS

Document Location: Location - NNSA/NSO Nuclear Testing Archive Address - P.O. Box 98521 City - Las Vegas State - NV Zip - 89193-8521 Phone - (702)794-5106 Fax - (702)794-5107 Email - CIC@NV.DOE.GOV

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AND CHANGE 2, 3 OCTOBER 1960 THERETO.

R 105483

CAPABILITIES OF NUCLEAR WEAPONS [U]

CLASSIFICATION CANCELLED *
WITH DELETIONS
BY AUTHORITY OF DOE/OC
REVIEWED BY *[Signature]* DATE *1/29/91*
* LTR DNA SWISHER TO
DOE MA-2MS, 3-14-90
[Signature] 2/13/91



CHAPTER 5 ELECTROMAGNETIC PHENOMENA

TYPES OF EFFECTS	5-1
ELECTROMAGNETIC PULSE PHENOMENA	5-1

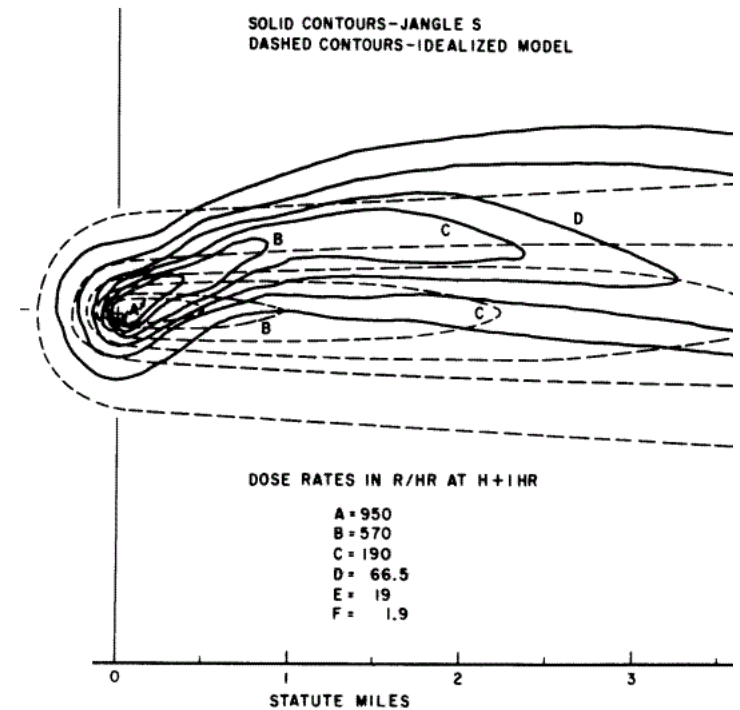
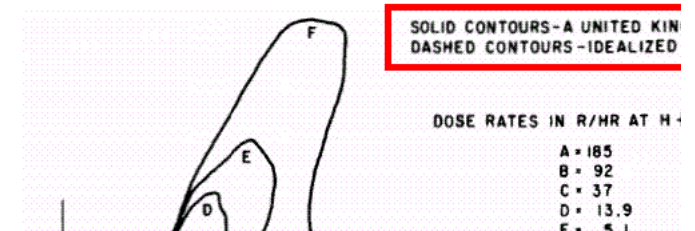


Figure 4-3. Comparison of Actual Fallout Contours with Idealized Model for a Yield of 1.2 kt and Effective Wind of 20 knots



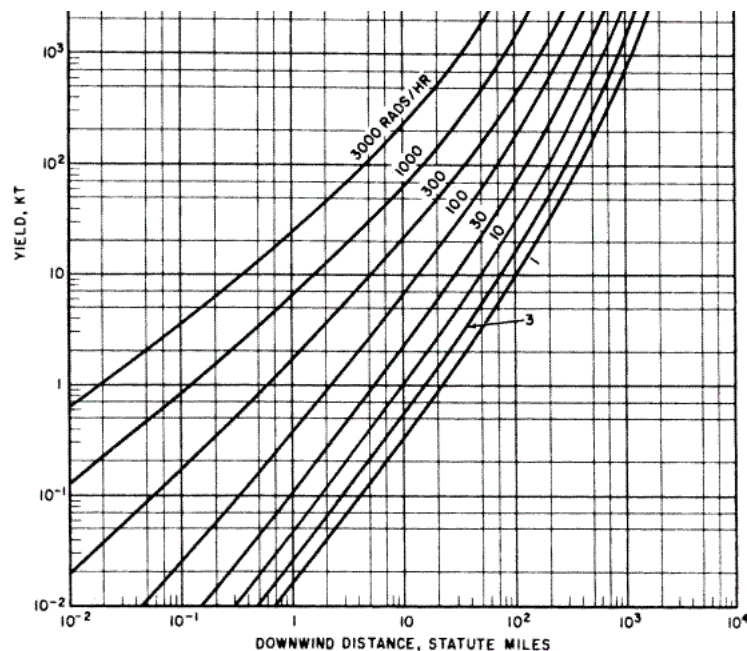


Figure 4-25. Yield vs. Downwind Distance, 40-knot Effective Wind

Fig 4-4 in 1964 *Capabilities of Nuclear Weapons* compares the actual fallout pattern from the 1956 Buffalo-2 surface burst in Australia with the idealized model based on Nevada tests. For a different plot of this Buffalo-1 fallout pattern see <http://www.dtic.mil/docs/citations/ADA956123>.

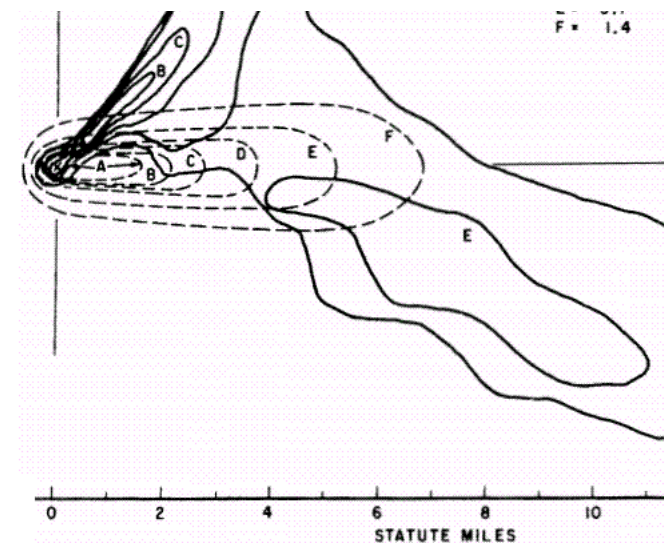


Figure 4-4. Comparison of Actual Fallout Contours with Idealized for a Yield of 1 kt and Effective Wind of 10 knots

British 1.4 kt BUFFALO-2 Surface bur Maralinga (fallout from calcium carbide)

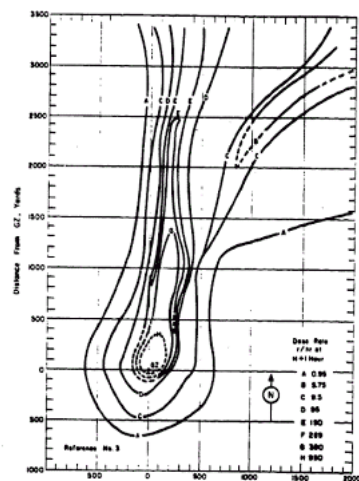


Figure 9. Operation BUFFALO - Round 2. On-site dose-rate contours in r/hr at H+1 hour.

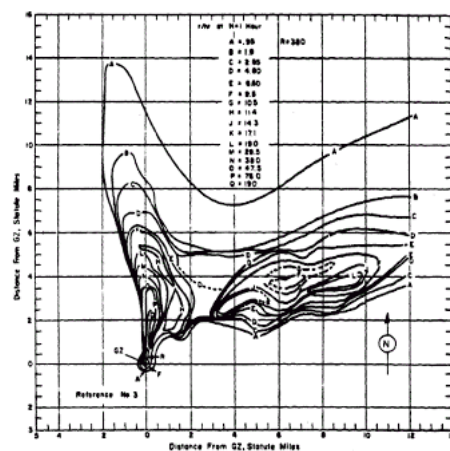


Figure 10. Operation BUFFALO - Round 2. Off-site dose-rate contours in r/hr at H+1 hour.

Source: ADA956123

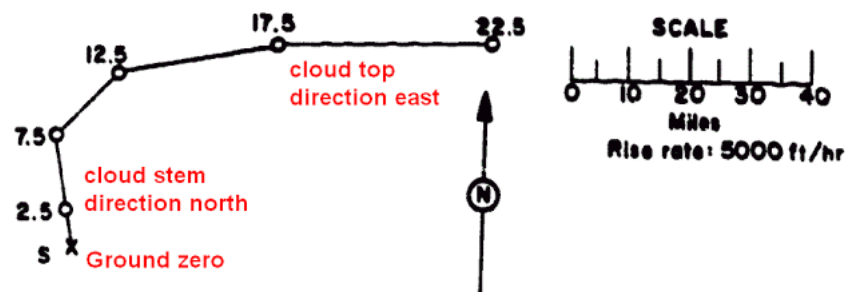
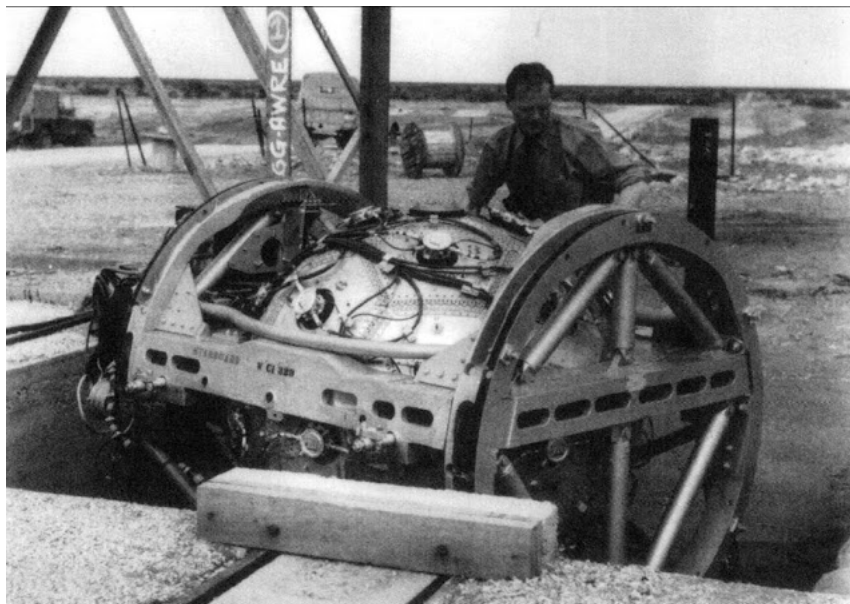


Figure 11. Hodograph for Operation BUFFALO - Round 2. Buffalo-2 was detonated in a windshear to separate the cloud top fallout pattern from the cloud stem fallout. The stem (wind from the surface to 7.5 kft altitude) headed northwards, but the cloud top fallout headed eastward.



Buffalo Round 2 was a 1.4 kiloton fission bomb (an **AWRE declassified photo of bomb being set up for the test is shown above**) surface burst on Maralinga soil, which is calcium carbonate topped with a thin layer of silicate sand. This Maralinga soil produced silicate sand (Nevada test like) fallout for tower bursts like *Buffalo Round 1* which produced no significant crater, proving that for low altitude bursts the fallout is caused by the sweep-up of loose desert sand by the afterwinds and updraft under the rising fireball. But for the surface burst *Buffalo Round 2*, the fallout particles were composed of calcium oxide surrounded by calcium carbonate which must have come from the calcium calcium subsoil, like the American tests on coral islands in Bikini and Eniwetok Atoll. This proved that the cratering ejecta provides the fallout material in a surface burst. The 1964 *Capabilities of Nuclear Weapons*, TM 23-200, uses this British surface burst to check its fallout model (the **illustration was deleted from the 1972 edition and does not appear in the 1957 edition**).

In other news, a new colour photo of the surviving 44 kiloton *Plumbbob-Smoky* nuclear tower burst tower in Nevada has been published:



Smoky Test Area

At the 1957 Smoky atmospheric nuclear tower test location, the usual post-shot cleanup procedures were not done after the detonation of this weapons related test.

38

2014

An Assessment of Historic Properties and Preservation Activities
at the
U.S. Department of Energy

The significance of the tower remains is that they were not vaporized by the heat of the 44 kt explosion, 700 feet above the ground. For Hiroshima and Nagasaki, where the yields were smaller and the burst heights larger, no buildings were vaporized at all. For a detailed description of this, see [Plumbbob weapon test report WT-1488, page 59](#):

"Observations of the remains of towers and shielding material after detonation at several ground zeros indicate that large masses of material are not vaporized. Observation of the residue of the Smoky tower indicated that a very significant portion of that tower remained including the upper 200 feet of steel. Another example similar to Shot Smoky was Shot Apple II, Teapot Series. Even though the total yield of Shot Apple II was about 32 kt, the floor of the cab and the main tower support columns remained intact. The results of the [11 kt] Shot Fizeau tower melt studies (Reference 3) show that about 85 percent of tower material was accounted for after the detonation and that only the upper 50 feet of tower was vaporized. No melting occurred beyond 175 feet from the top of the tower although the fireball theoretically engulfed more than 400 feet of the tower."

Capabilities of Nuclear Weapons 1964 proves this by the following graph showing the small surface ablation of various metal spheres placed within 400 feet from the 23 kt Teapot-Met nuclear test in 1955:

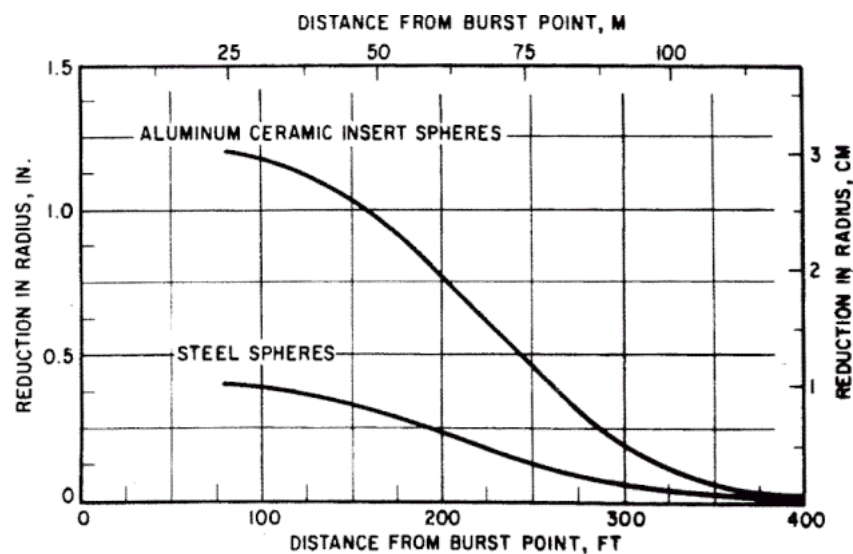


Figure 13-5. Reduction of Sphere Radius with Distance from a 23-kt Burst for Aluminum, Steel, and Ceramic Insert Spheres



29 kt *Teapot-Apple 2* nuclear test house survived 1955 shot and remains in Nevada today, 60 years later.

J. E. Kester and R. B. Ferguson, Operation Teapot, Project 5.4, Evaluation of Fireball Lethality Using Basic Missile Structures



Much of the 29 kt *Teapot Apple 2* bomb support tower 500 ft high was neither vaporized nor melted, nor was lethally radioactive!

J. E. Kester and R. B. Ferguson report in *Operation Teapot, Project 5.4, Evaluation of Fireball Lethality Using Basic Missile Structures*, WT-1134 (originally Secret – Restricted Data), AD0340137, that within the 23 kt *Teapot-Met* (Nevada, 15 April 1955, 400 ft steel bomb tower) although the bomb test steel tower was blown down, it was not vaporized and much survived despite having been engulfed by the fireball itself, as stated on page 30:

“... nearly 225 feet of the main support members of the shot tower were still intact and laid out radially from their original position.”

Page 116 of WT-1134 states that after the 2 kt *Moth* shot atop a 300 foot triangular tower on 22 February 1955: “The three tower legs were laid out approximately radially from their pre-shot positions. The longest tower leg found was about 200 ft long. The other two legs appeared to be about 150 ft long. All three guy cables were still attached ... A few large pieces of the tower, about 20 to 30-ft long, were strewn to ranges of about 200 feet.” It adds that after the 7 kt *Tesla* shot atop a 300 ft square tower on 1 March 1955: “the four tower legs ... were laid out radially from their original position ...

The tower legs remained intact to lengths of about 125 feet. All four guy cables were still attached ...” The 43 kt *Turk* nuclear test was fired atop a 500 ft square tower, leaving 100 ft lengths of tower lengths on the ground (page 118). The 8 kt *Bee* shot atop a 500 ft tower failed to even knock down most of the tower (pages 120-1): “A large portion of this tower was still standing after the shot. ... It is estimated that at least 150 feet of the tower was essentially undamaged and standing erect with an additional 50 to 75 feet of the tower slightly melted and drooped over at the top.” The 14 kt *Apple* /shot atop a 500 ft square tower results (page 121): “The main support members of the shot tower still remained to lengths of about 150 feet with the top 25 to 50 feet being crushed and split ... Some of the legs remained attached to the base.” The 23 kt *Met* shot was atop a 400 ft square tower (pages 123-4): “About 225 feet of the tower legs were still intact with the top 25 to 50 feet being crushed, split and slightly melted”

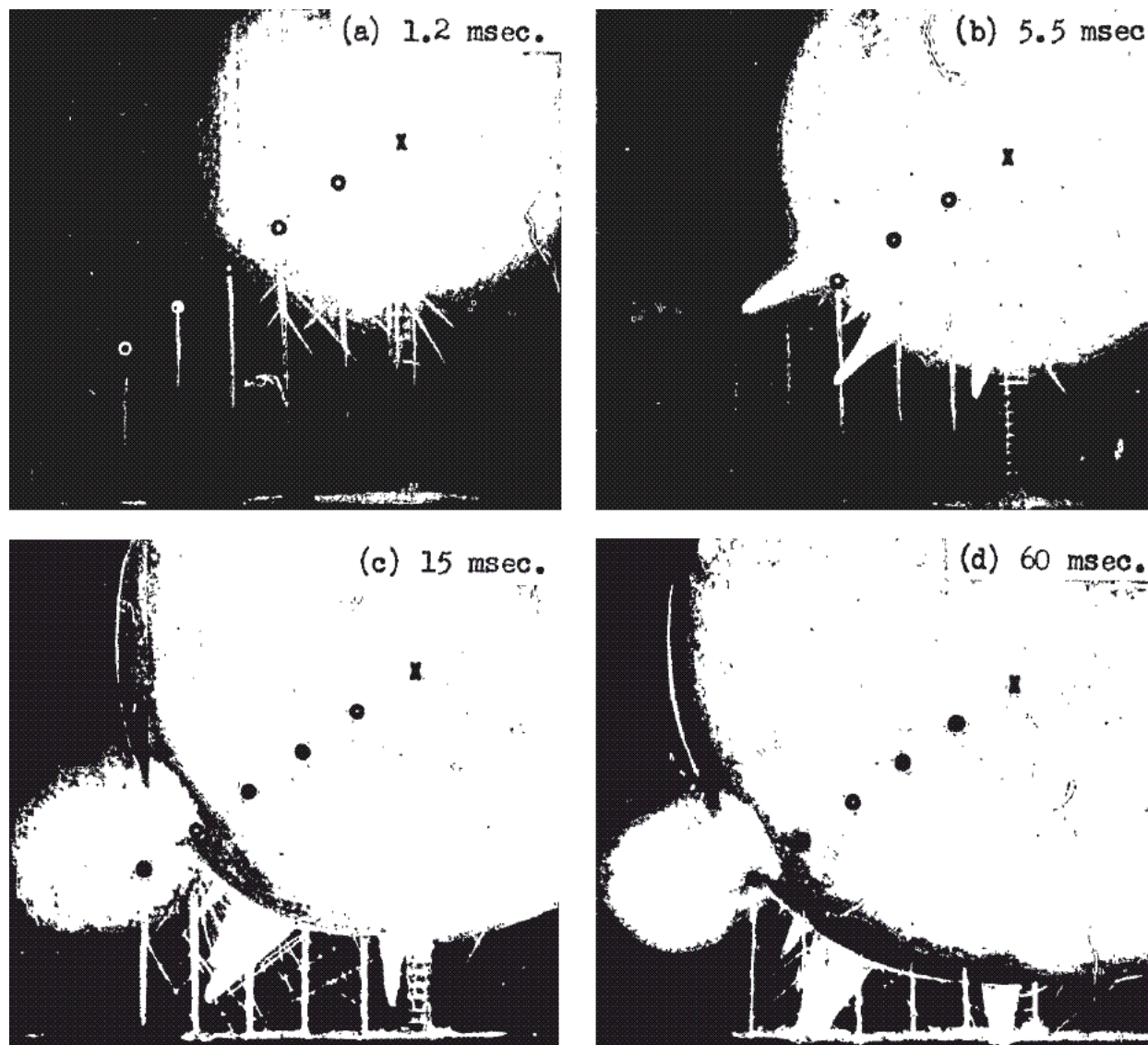


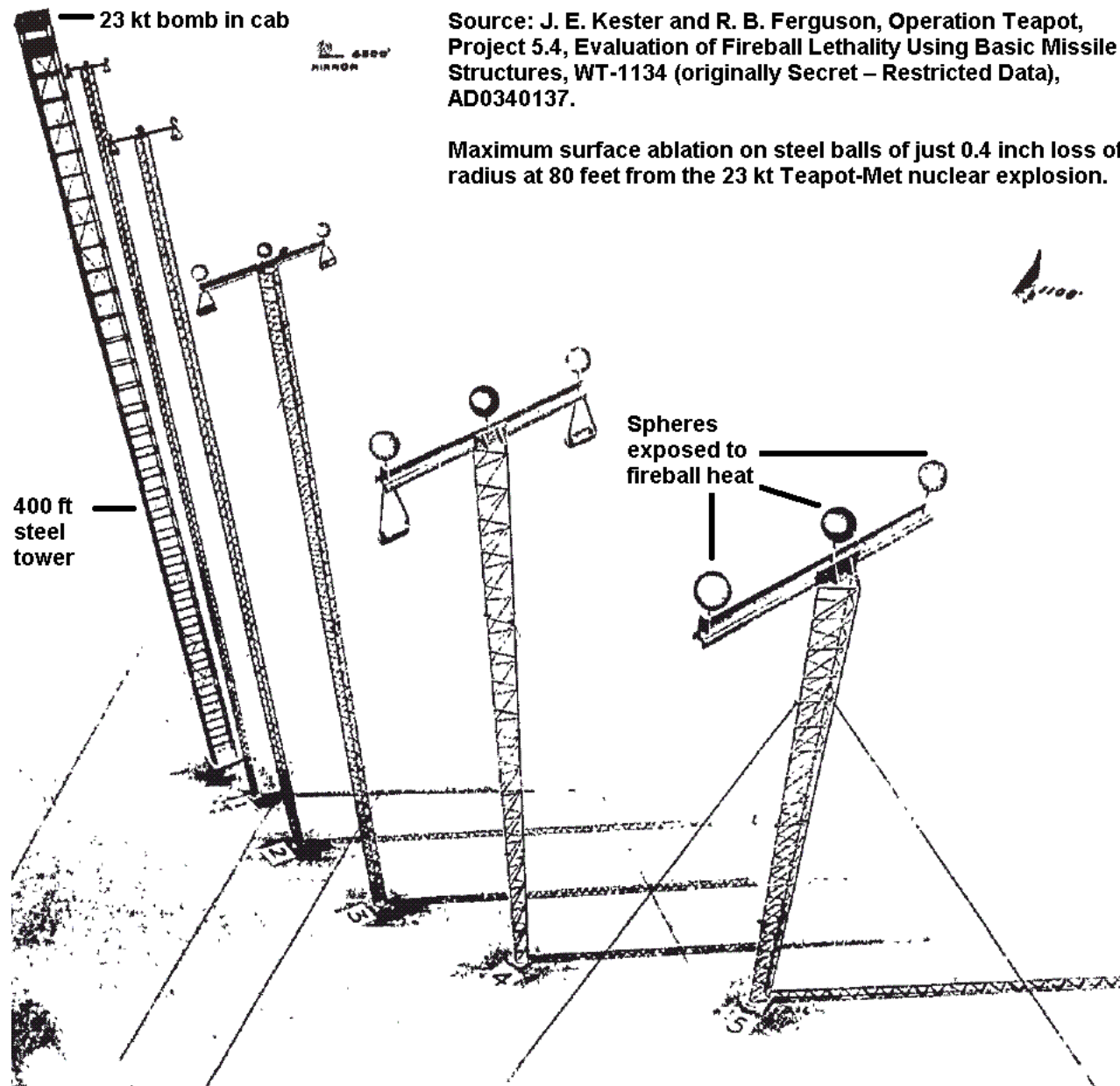
Figure 3.23 Sequence of Frames From a Film Showing Engulfment of Tower Specimens by Fireball.

23 kt Teapot-Met: J. E. Kester and R. B. Ferguson, Operation Teapot, Project 5.4, Evaluation of Fireball Lethality Using Basic Missile Structures, WT-1134 (Secret – Restricted Data), AD0340137

“Observations of the remains of towers and shielding material after detonation at several ground zeros indicate that large masses of material are not vaporized. Observations of the residue of the *Smoky* tower [44 kt bomb atop a 700 foot high steel tower] indicated that a very significant portion of that tower remained, including the upper 200 feet of steel. Another example similar to Shot *Smoky* was Shot *Apple II* [29 kt atop a 500 ft steel

tower], *Teapot Series*. Even though the total yield of *Shot Apple II* was about [29 kt], the floor of the cab [housing the nuclear bomb itself, at the top of the tower] and the main tower support columns remained intact. The results of the *ShotFizeau* [11 kt atop a 500 ft steel tower] tower melt studies (W. K. Dolen and A. D. Thornborough, *Fitzeau Tower Melt Studies*, Sandia report SC-4185, 1958, Secret) show that about 85 percent of tower material was accounted for after the detonation and that only the upper 50 feet of tower was vaporized. No melting occurred beyond 175 feet from the top of the tower although the fireball theoretically engulfed more than 400 feet of the tower.”

- Dr Kermit H. Larson, et al., *Distribution, Characteristics, and Biotic Availability of Fallout, Operation Plumbbob*, weapon test report WT-1488, ADA077509, July 1966, page 59.



American public enthusiasm for nuclear weapons effects studies, Nevada 1953 troop tests for Korean War deterrence:

August 12, 1953

Dear

This is in reply to your letter of August 8.

The Commission does not deliberately expose any human being to nuclear radiation for research purposes unless there is a reasonable chance that the person will be benefited by such exposure.

Needless to say, we are interested in exploring all possible means of evaluating the biomedical effects of atomic blasts, but we have restricted such experimentation to laboratory animals.

We must therefore decline your generous offer, obviously dictated by the highest humanitarian feelings.

Sincerely yours,

John C. Bugher, M.D.
Director
Division of Biology and Medicine

MEDICINE, HEALTH & SAFETY

DOE ARCHIVES
ATOMIC ENERGY
COMMISSION
Division of Biology and Medicine
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O'NEILL:emr

Adm.	Med.	X-O	Director
O'Neill	Brown	Brown	Dr. Bugher
8/12/53	8/12/53	8/12/53	8/12/53

10-1118

US OPENNET DOE DOCUMENT 16289509

EMA:RON

July 28, 1953

Dear Mr.

This is in reply to your letter of July 20 addressed to the Division of Research, which has been referred to this office for reply.

The Commission does not deliberately expose any human being to nuclear radiation for research purposes unless there is a reasonable chance that the person will be benefited by such exposure.

Needless to say, we are interested in exploring all possible means of evaluating the biomedical effects of atomic blasts, but we have restricted such experimentation to laboratory animals.

We must therefore decline your generous offer, obviously dictated by the highest humanitarian feelings.

Sincerely yours,

US DOE ARCHIVES
ATOMIC ENERGY
COMMISSION
Division of Biology and Medicine

Atomic Energy Comm.
Washington 25, D.C.

Gentlemen:

This is probably the strangest communication you have ever read. But please read the following. Before going any further I want to emphasize this letter is not for publication, it is strictly confidential!!

I am 29 years of age and in the best of physical and mental condition, as please do not think I am crazy. Height 5'11 1/2" and weight 178 lbs. I have been wondering exactly how close a human being can be to an exploding atomic bomb, absorb its effects (radiation) vibrations, etc. and yet still live.

I suppose you might have wondered, too. I believe it is a great thing, perhaps life itself to our country and the free people of the world to know.

I also suppose it would benefit mankind a great deal to know how much the human being can take and what can be done for him (if anything) after its effects. That, to me sounds like a real experiment you too may like to find out.

If you are further interested, I may be your guinea pig. However, there will be more details to go into if you are interested.

July 20, 1953

Dear Sir;

My name is
Here is the reason for this letter. With all of these tests that are being made with the atomic bomb would you have any need for a live human to be placed in the target area where you make the test?

If you do I would like to be that person. Am not doing this for any fame, monetary benefit or any other sensational

3353

John C. Bagher, M.D.
Director
Division of Biology and Medicine

July 24, 1953

US OPENNET DOE DOCUMENT 16289511

Dear Madam:

This is in reply to your recent letter to the Atomic Energy Commission offering yourself as a human guinea pig in atomic research.

First, let me say that I am deeply sorry to hear of your illness, and I do hope that some form of treatment may be found for your case.

The Commission does not deliberately expose any human being to nuclear radiation (there is no atomic "germ") for research purposes unless there is a reasonable chance that that person will be benefited by such exposure. Needless to say, we are interested in exploring all possible means of evaluating the biomedical effects of atomic radiation, but we have restricted such experimentation to laboratory animals.

We must therefore decline your generous offer, obviously dictated by the highest humanitarian feelings.

With many thanks, I am

Sincerely yours,

John C. Bagher, M.D.
Director
Division of Biology and Medicine

Dear Sir:
So many people have said that the atomic test is the cause of all the illness going on in the U. S. A. I'm sure you have had some thought about the fact. The point is this the doctors said I should have an operation that there is only a chance in a million I'd pull through. Instead would you let me be a guinea pig & experiment on me with the atomic germ & find out if it will help me. Please - 29684

Letters from American patriots begging to be used as guinea pigs for nuclear explosion radiation effects studies, including one from a woman with a terminal illness. In those days, the knowledge of the devastation of conventional warfare in WWII was still fresh, and nuclear deterrence against conventional warfare was applauded, not hated as it is today by the deluded.

JUN 26 1953

President Dwight D. Eisenhower
 White House
 Washington D.C.

US OPENNET DOE DOCUMENT 16289512

Dear President Eisenhower:

I hope you don't think I'm crazy. But I am offering myself to be used as a "guinea pig" to an Atomic Bomb blast. America is the only country in the world I'd want to die for. And for America's people, welfare, and the future life of its people, I'm willing to die for now. I await your reply.

Sincerely yours

P.S. My age is 13.

Dear

I am writing in reply to your recent letter to the President in which you offer yourself as a "human guinea pig."

The Atomic Energy Commission does not deliberately expose any human being to atomic weapons blast for research purposes. It is true that some troops have been used in exercises in connection with atomic tests, but these men were protected from the blast and the exercise was purely a military one.

A fellow of your age shouldn't be thinking of dying but rather you should be looking forward to the contributions you will some day be able to make to this great country, of which you are so justly proud.

Thank you for your patriotic offer, which we must decline.

U.S. DOE ARCHIVES
 ATOMIC ENERGY
 COMMISSION
 Division of Biology and Medicine
 353
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Sincerely yours,

SIGNED AND
 DISPATCHED

John C. Bugher, M.D.
 Director
 Division of Biology and Medicine

CC: Honorable Sherman Adams
 The Assistant to the President

School boy volunteering to the President in 1953 to donate his life by becoming a human "guinea pig" at the Nevada nuclear weapon test site, to assess the effects of nuclear explosion radiation on human beings. The U.S. Atomic Energy Commission radiation effects director, Dr John C. Bugher, politely declined the patriotic offer. (What a different set of letters they would receive nowadays if nuclear weapons tests were resumed, I wonder?)

Review of documentary, *Hiroshima: the aftermath*, UK Channel 5 TV, 6 July 2015, 8pm ([online here](#))

This documentary is very important because it proves the reason why no final air raid warning was given in Hiroshima, by interviewing the military personnel in charge of air raid warnings both in Tokyo (by radio identification of B29 call signs) and in Hiroshima's main military base, particularly Yoshie Oka, a female army B29 tracker based in the military bunker just north-east of Hiroshima Castle. **Hiroshima and Nagasaki both had enough air raid shelters for the people, which remained intact and shielded most of the radiation, but only 400 of the more than 70,000 shelter places in Nagasaki were occupied, and a similar situation occurred for Hiroshima.** Thus, the failure of the warning system in the surprise attack caused the casualties.

Air raid sirens had been sounded hours earlier when the Hiroshima mission weather survey plane (flying far ahead of the bomb carrying Enola Gay) flew over Hiroshima, but that was a false alarm. Some have speculated that no effort to give another air raid alarm was made when the final three B29s appeared (Enola Gay with the bomb, a blast measurement plane which dropped parachute-delivered radio-telemetry blast pressure gauges because nobody had ever tested the gun type Hiroshima bomb unlike the implosion Nagasaki weapon), and another plane lingering behind with British and other observers), because of this "crying wolf" effect. But this is simply not true. Many people were travelling outdoors, and school children were in work parties clearing firebreaks outdoors, at 8:15am when the Hiroshima

explosion occurred.

In modern cities, all concrete buildings offer good radiation and blast shelter, unlike the predominant wooden houses of Hiroshima. **In Pacific nuclear tests, concrete buildings with simple earth buttressing survived close proximity to the biggest American multi-megaton thermonuclear weapons ever made.**

Yoshie Oka, who is still alive, explained that she tracked the final B29s and sent a message to higher authority in good time, but no order came back to sound the air raid alarm until 8:13am, just *two minutes* before the explosion, because the officers were all having breakfast at the same time and nobody was on hand to immediately order the air raid sirens! When she was given the order, she was unable to put the authorization code into the air raid siren system before the flash of the bomb came through the window. Therefore, it was an air raid *blunder* that prevented people taking shelters in Hiroshima.

Naturally, following politically-correct CND type propaganda, the survival possibilities from the simple but effective air raid shelters was ignored in the Channel 5 program, which tried to contrast the American celebrations of Japanese surrender with the misery of the people burned outdoors in Hiroshima. It also obfuscated the mechanisms and time scales for mortality, claiming initially that the population was "instantly" vaporised, then at 11 minutes 9 seconds into the program claiming they died in "five seconds" before finally declaring at the end that they died over many decades. The reality is that blast injuries killed within a few days, while thermal and nuclear radiation killed on average within a month.

A typical natural cancer mortality rate of 20% was increased to nearly 21% on Hiroshima cancer mortality statistics. As usual for media anti-nuclear propaganda "education", the program totally ignores the published DS02 research program which established the radiation dosimetry for different kinds of buildings and exposure sources (prompt and delayed), and thus fails to discriminate between the immediate nuclear radiation received within 20 seconds (neutrons and gamma rays from the fireball before it ascended to 60,000 feet) and the subsequent rainout of firestorm soot by condensed moisture. The fires took 20 minutes to begin to merge, and 2-3 hours to reach peak firestorm intensity, which:

- (1) allowed many survivors to escape the firestorm area in good time, having survived in concrete buildings,
- (2) the soot rainout process proved by Hiroshima debunks the "stable soot cloud" theory behind "nuclear winter", **even if modern tall city concrete buildings didn't block out the heat flash by George R. Stanbury's shadowing effect**, and
- (3) allowed the radioactive cloud to be blown many miles downwind before the black rain was even formed over Hiroshima. Therefore, the radioactive cloud was blown away before the firestorm created soot rainout.

The two never mixed to any appreciable extent, because the action of the wind in blowing fallout away before the firestorm began. So the local radioactive fallout in Hiroshima when actually measured (as recorded in the book *Hiroshima* by John Hersey in 1946, and other studies) was trivial and contributed an insignificant percentage of the total radiation in Hiroshima and Nagasaki. Essentially all of the dose came within 20 seconds from initial radiation, not fallout. **It is shameful that this myth, started by Stalin's alleged communist spy and propagandist Willfred aka Peter Burchett in 1945, continues, aided by well known propaganda organizations like CND and the Kremlin, that obfuscate the truth and deliberately distort the facts.** As for the inhabitants of Rongelap after their exposure on 1 March 1954, the lingering radiation years afterwards is soon dwarfed by natural background radiation, and so contributes an insignificant percentage of the total dose, most of which comes soon after a nuclear explosion (owing to the rapid decay rate).

Nevertheless, the program does document the rapid recovery of trams, railway, electricity, and the rapid rebuilding of Hiroshima.

John C. Bugher, M.D., Director
Division of Biology and Medicine

April 12, 1954

Gordon M. Lunning, Health Physicist
Biophysics Branch, Division of Biology and Medicine

SUMMARY OF UNCLASSIFIED CALCULATIONS ON PRODUCTION OF COBALT-60
IN FISSION DEVICES

1. Assuming the production of one neutron per 10 mev of energy release*, a 1-megaton bomb would produce 2.5×10^{27} neutrons.
2. If every neutron were to be captured by a Co^{59} nucleus, it would require 2.5×10^5 grams (about 550 lbs.) of Co^{59} or a volume of one cubic foot.
3. In view of the low cross section of Co^{59} and the attenuation of Co^{59} as a result of the explosion, it is assumed that less than 0.1% of the neutrons released would be absorbed in Co^{59} .
4. If one arbitrarily selects 0.1% as the percentage of neutrons produced that will react with a Co^{59} nucleus, a 1-megaton fission device would produce 2.7×10^5 curies of Co^{60} . Assuming that 25% of this activity fell out in 5,000 square miles around ground zero, the initial dose rate from Co^{60} would be about 0.15 mr/hr. This would be insignificant compared to the radiation dose rate from the fission products from a nuclear weapon for many months after detonation.

US Opennet DOE document 904085: cobalt 60 bombs debunked by simple calculations in 1954. You get more radiation energy by using neutrons to cause fission than to make cobalt 60. Additionally, even when cobalt 60 starts to contribute a significant percentage of the diminishing fallout radiation months later, the dose rate is then low enough to permit decontamination to remove (or bury by deep plowing in agricultural areas) co-60 fallout.

Above: No significant danger from Kubrick's Cobalt 60 bomb sci fi, debunked in 1954 by USAEC's health physicists.

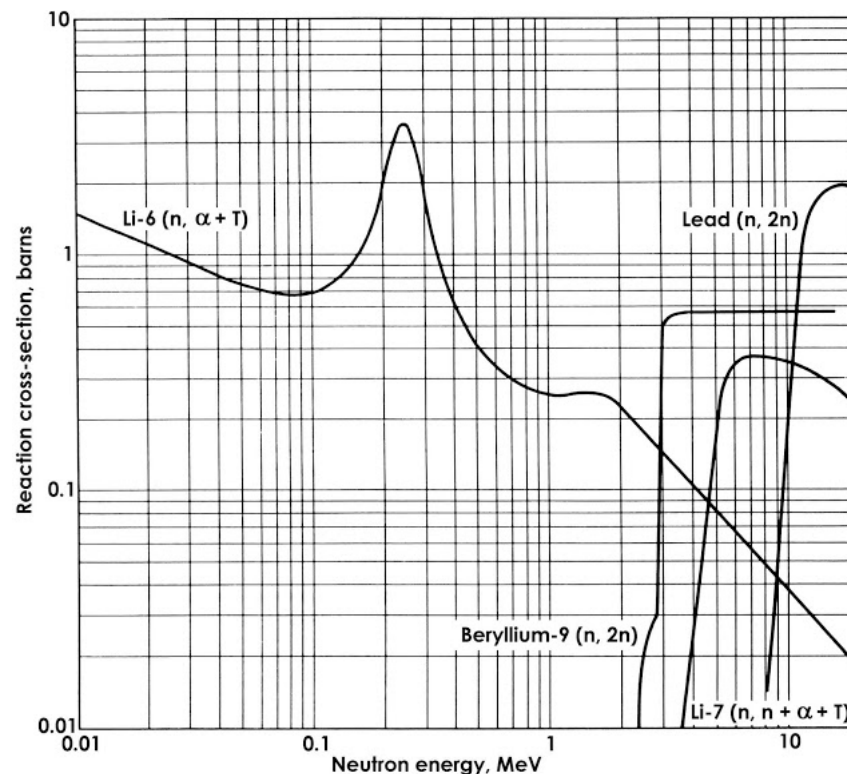
An analogy to the anti-nuclear religion of dogmatic pseudoscience is Michael Mann's error in denying natural climate change: Mann's interpretation of ice sublimation and tree ring proxies relies on an implicit assumption of positive feedback from H₂O, not the reality of negative feedback from condensed atmospheric water clouds, an assumption which suppresses the much wider range of natural past climate fluctuations, since it completely ignores the fact that when temperature rises, you get more water evaporation and clouds blocking sunshine for photosynthesis or ice sublimation of heavy oxygen-18 in water molecules, so these proxies record *less* apparent temperature effects *than really occur when you take account of cloud cover being a function of temperature*. As with Sternglass's pseudoscientific correlation of infant mortality to trivial (compared to natural background) fallout nuclear radiation during the Cold War, CO₂ correlations to temperature using ice core and tree ring proxies are inaccurate, since they ignore cloud cover (negative feedback from water evaporating and forming clouds, a thermostat that regulates temperature). Plant growth by photosynthesis and ice molecule sublimation are both a function of direct sunlight exposure providing energy to break chemical bonds, not merely ambient temperature as Michael Mann implicitly assumes.

Deniers of the facts, and the deaths they cause by diverting limited resources from real dangers.

Many millions of people have been killed in conventional wars since 1945. That's the real problem to be addressed by nuclear deterrence and civil defense.

Conventional wars in Europe were deterred by Reagan's W79 neutron bomb deployment, during the 1980s. That event was greeted with condemnation, but the Cold War soon ended, with a negotiation from a position of strength. The W79 tactical nuclear weapon is a purely defensive weapon *against conventional warfare*, since it *causes minimal damage to civilian targets*, but maximises damage to mobile, active military invading forces. If they are dug in deep in defensive, they are safe like civilians in modern concrete cities, so tactical nuclear weapons are *purely defensive weapons against an invading army on the move on foot, in tanks and APCs*. The point of tactical nuclear weapons is that they keep the enemy penned into defensive positions, preventing invasions. Russia did not want to stock it, because we were not prepared for, or interested in, any invasion of Russia. **CNDs propaganda war against the neutron bomb, masterminded by**

Baroness Cathy Ashton, proves this.

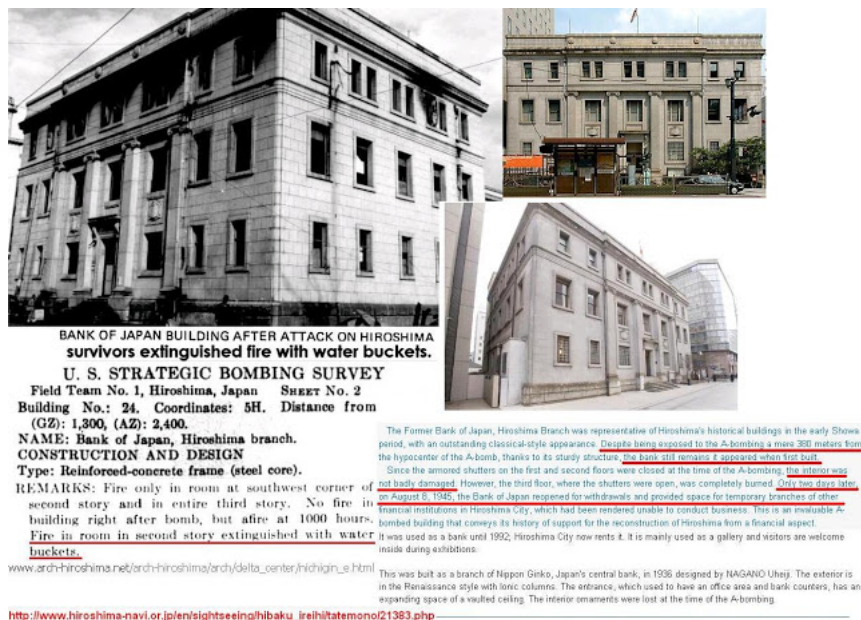


All existing thermonuclear weapons can be converted into relatively clean devices by using a lead pusher in place of fissionable material like uranium in the secondary stage. Note that lead is *more* effective as a neutron multiplier than beryllium for 14.1 MeV neutrons from DT fusion, as this graph shows. Lead has a cross-section of nearly 2 barns for the beryllium equivalent neutron multiplying reaction ($n, 2n$) for 14.1 MeV neutrons. For beryllium, the cross section is *less* than 0.6 barns, less than that of lead by a factor of about 3.3. Notice also that lithium-7 (92.5% of natural lithium) is actually *better* at producing tritium and neutrons when combined with deuterium in the fusion stage, than expensively enriched lithium-6 (7.5% of natural lithium) which is only best for neutrons of less than 4.7 MeV.

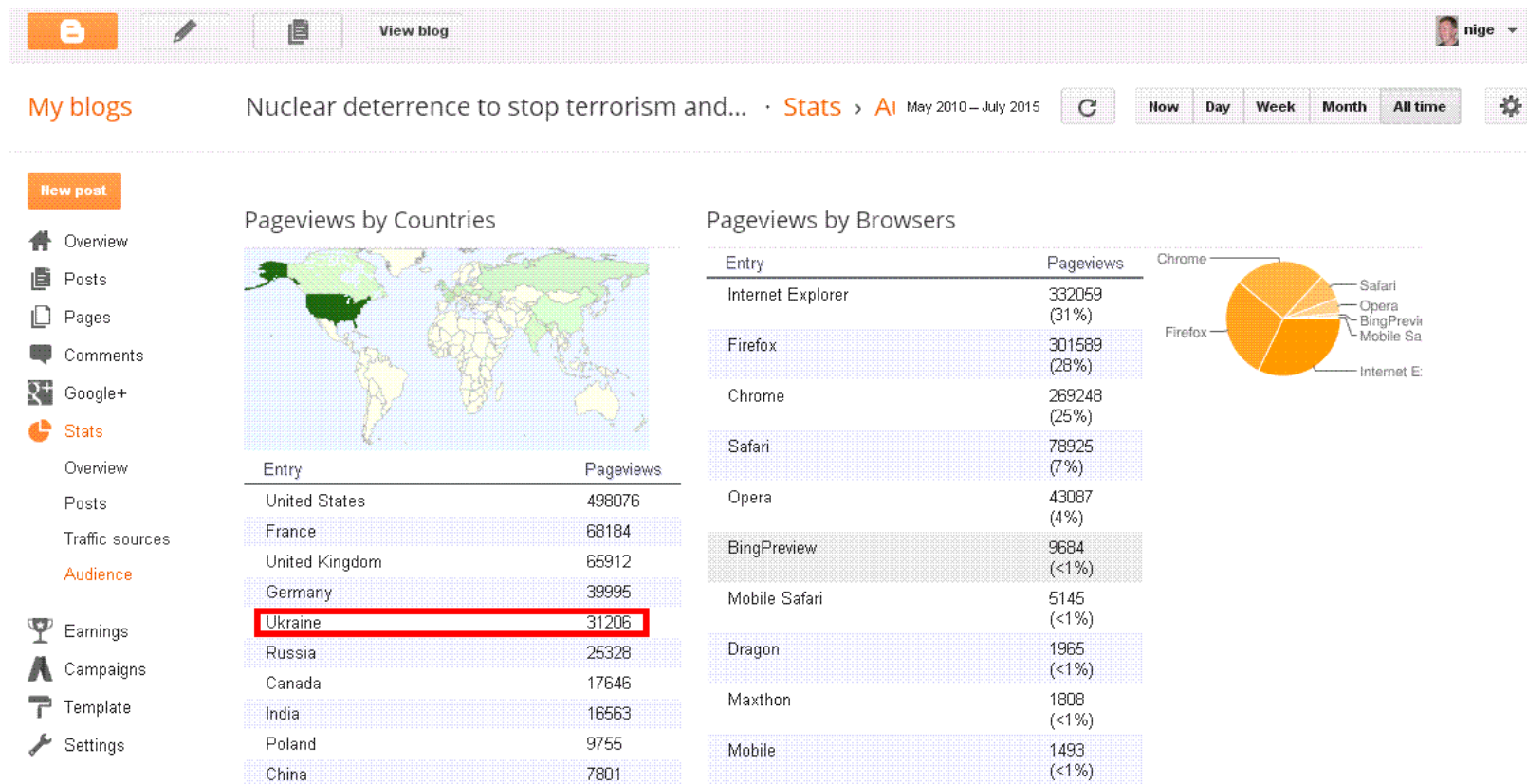
Why not put tactical nuclear weapons to their original purpose of saving lives by deterring or rapidly ending conventional wars? As Hiroshima's experience of survival of modern concrete buildings and the people in them proves (see below), you get *less destruction of modern concrete-built cities and less lives lost if you have cheap effective but working civil defense and tactical nuclear weapons*, a situation you need in civil wars regardless of whether nuclear or "conventional" weapons are used.

The truth is simple to grasp: when a 1 kt tactical neutron bomb detonates 500 metres over a target you get far *less heat and blast effects* than you get with conventional weapons! What you do get is a burst of neutrons which stop insurgents in tanks, APCs, and in the open. The neutrons are rapidly attenuated by city concrete buildings, but not by steel armour. Popular propaganda myths that the enemy can absorb the 14.1 MeV DT fusion neutrons with plastic or thermal neutron (0.025 eV) absorbers used in reactors (boron, cadmium) are false. As neutron bomb developer Samuel Cohen shows, the neutrons are scattered to a greater extent in air than gamma rays, so they arrive from many directions (not merely from the direction of the bomb), so the modifications needed to a tank or APC to make it absorb the high energy bomb neutrons would prohibit its function as an effective fighting vehicle. This is not true of the much heavier mass of shielding in all modern concrete city buildings (which would prohibit movement of a tank)

and simple earth covered shelters, such as were used in Britain and Japan in WWII (see below for the reason why air raid warnings failed in Japan in August 1945). The *credible deterrent* capability of this innovation offers a *real* alternative to the millions of "conventional warfare" casualties in protracted battles in Korea, Vietnam and recent wars like Afghanistan, Iraq and Syria:



The 1 kt neutron bomb detonated at 500 metres altitude produces similar radiation to the 16 kt Hiroshima bomb, but without the destructive blast and thermal flash effects, which are suppressed. This would produce minimal effects on a properly protected civilian population, and maximum effects on invading forces and personnel in military vehicles. Demonstrating this survival potential of modern city buildings is experience from Hiroshima: the **Bank of Japan, Hiroshima, survived 380 m from Ground Zero, within the firestorm area, when fires were extinguished by water buckets by its survivors, the majority of people in the building having survived. Secret US Strategic Bombing Survey report proves civil defense for modern concrete buildings is effective.** The building was reopened as a bank on 8 August, merely two days after nuclear attack, and continued in use as a bank until 1992. It remains in Hiroshima. This beautifully designed and sturdy reinforced concrete building was designed in 1936 by Nagano Uheiji.



Since Putin invaded Ukraine and seized Crimea, early last year, approximately 31,000 visitors from Ukraine have come to this blog. We hope to continue to encourage a realistic approach to both **proof tested cheap civil defense countermeasures against bombing**, and the practical, **credible use of nuclear deterrence to end conventional warfare, invasions, and mass killing**. Political paper promises like the 1938 Hitler-Chamberlain peace deal or the **1994 Bucharest Memorandum cater to utopian lawyers and nuclear radiation pseudoscience, and are the ideal of the enemies of realistic life saving deterrence and protective countermeasures**. The non-United Nations has actually been responsible for many protracted, horrific conventional wars since 1945 in trying to bring together of conflicting interests, so that realistic, prompt, effective resolutions are prohibited by veto. This is the fundamental, intrinsic flaw of international peace keeping. If everyone must agree before decisive action is taken, nothing will be done in time to save lives. We see this effect in all forms of groupthink, where vetoes are used to hold up, if not prevent, all realistic hopes of progress.

Daily Herald

No. 7041

TUESDAY, OCTOBER 5, 1938

ONE PENNY

MR. CHAMBERLAIN DECLARES "IT IS PEACE FOR OUR TIME"

5,000 British Troops Will Be Sent To Sudetenland PRAGUE'S DAY OF SORROW

TO a frenzied welcome from tens of thousands of Londoners, Mr. Neville Chamberlain came home last night and announced to all the world: "I believe it is peace for our time."

GERMANS WILL MARCH AT NOON
(Continued from page 1)
The British government has announced that it will send 5,000 British troops to the Sudetenland region of Czechoslovakia.

The Premier had five agreements in the pocket. A Czechoslovakian army of 100,000 men was to be sent to the Sudetenland region of Czechoslovakia. The British government has announced that it will send 5,000 British troops to the Sudetenland region of Czechoslovakia.

From a Window at No. 10

Mr. Chamberlain looking out of a window at No. 10, Downing Street, London, after his return from Prague.

BUT— Poles Rush Ultimatum

BY THE G.P.O. COMMUNICATIONS SECTION

WITHIN 24 hours of the signing of the Munich Pact, Poland has issued an ultimatum to the British government.

**INSIDE
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"The Second Time"
From a first-hand witness of the 10th of the British Empire's history, the author of "The Second Time" tells the story of the British Empire's history.

Czechs Cry "We Want To Fight"

Prague, Oct. 5.—The Czechs today were told that Chamberlain's offer was a "betrayal" and that they would fight for their independence.

What They Will Lose

In a new book, the author tells the story of the British Empire's history and the loss of its empire.

BLACK & WHITE

There is no other Scotch Whisky in the world as fine as Black & White. It is the only Scotch Whisky that is made from pure malted barley.

It's the Scotch!

See Agents, Radio-Rite and Scotch Whisky

[illegible]

The Treaty of London in 1839 guaranteed British protection for Belgium, hence WWI in 1914 when Germany invaded Belgium. The 1994 Bucharest Memorandum guaranteed British protection for Ukraine including Crimea. Russia invaded in 2014. Fear of undermining the so-called (un) "United Nations" by tactical nuclear war led to millions of deaths in Korea and Vietnam.

Peace in our time political propaganda. Arms spending data prove that Chamberlain was rearming Britain *slower* than Germany was rearming during the entire 1930s, so Britain was losing the arms race, and losing time, rather than "buying time" as revisionist historians insist (they do this by ignoring the facts). In fact, like the USSR in the 1980s, Germany was a socialist state with massive financial restraints which would have inevitably *gone bankrupt very quickly - or more likely - gone against Hitler's leadership very quickly - if credibly contained by a full on arms race, of precisely the sort Churchill called for*. The limited military expenditure of Chamberlain did not deter war. This economic reality check is *not speculative*.

3. Conditions on Morning of Attack

a. The morning of 6 August 1945 was clear with a small amount of clouds at high altitude. We was from the south with a velocity of about 4 miles per hour. Visibility was 10 to 15 miles.

b. An aircraft "alert" was sounded throughout Hiroshima Prefecture at 0700 hours. Reports: the number of planes causing this alert were on flitting. The governor of the prefecture state that four B-29s were sighted, while the Kure-Navo District reported three large planes.

c. The aircraft apparently came out on Hiroshima from the direction of Bungo Suido on Kure-Navo Peninsula, circled the city, and withdrew in the direction of Harima-Nada at 0735 hour "All-clear" was sounded at 0731 hours.

d. The following circumstances account in part for the high number of casualties resulting from the atomic bomb:

- (1) Only a few persons remained in the air-raid shelters after the "all-clear" sounded.
- (2) No "alert" was sounded to announce the approach of the planes involved in the atomic bomb attack.
- (3) The explosion occurred during the morning rush hours when people had just arrived at work or were hurrying to their places of business. The concentrated population in the center of the city where the principal business district was located.
- (4) Many persons residing outside the city were present for reasons of business, travel and pleasure.
- (5) National volunteer and school units were mobilized and engaged in evacuation operations.

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[The effects of the atomic bomb on Hiroshima.](#)

THE UNITED STATES
STRATEGIC BOMBING SURVEY

THE EFFECTS OF THE ATOMIC BOMB ON HIROSHIMA, JAPAN

Volume II



Physical Damage Division
Date of Survey:
14 October-26 November 1945
Date of Publication:
May 1947

Capabilities Of Nuclear Weapons

Edit

by [Nigel B. Cook](#)

Published [July 13, 2015](#)

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As occurred tragically in the 1930s when criticisms of Nazi eugenics "science" were censored out as being quackery by a media which was deluded by fashionable best selling books like *Man the Unknown* by gas chamber eugenics proponent **Medical Nobel Laureate eugenicist Dr Alexis Carrel** and other big shots, *the popular media prefers to cater to groupthink consensus, and to get quotes from bigots, instead of digging up the truth*. We do not have a truly free media when fashion prevents the facts from being openly and freely discussed to ascertain the truth on nuclear weapons deterrent capabilities for ending warfare. The perils from pseudoscience surviving in popular culture on the basis of "gut feeling" censorship of truth was revealed when the consequences of eugenics pseudoscience were exposed in 1945. Science is not a particular method (methods change as a result of science, as Feyerabend explained), but an *objective attitude, an interest in understanding and expanding upon the data from every objective angle, and of critically testing ideas and theories, and contrasting them to alternative models*. Censorship due to bias is anti-science, and leads to disaster, as in anti diversity eugenics. Resources end up focussed on dealing with false scare-mongering paranoia, just as eugenics ended up being used by racists and holocaust deniers. If everyone was objective, the money-making eugenicists and racist holocaust deniers could be ignored, and the real problems could be solved.

Why do CND people dogmatically reject truth, and go espousing the old weapons effects exaggerations that in the 1930s proved invaluable to enemies for coercion, appeasement, and megadeaths by costly "conventional" warfare?

UK NATIONAL ARCHIVES: CAB 158/51

JIC(68) 4 (Final)

22nd January, 1968.

EMPLOYMENT OF SOVIET FORCES IN THE EVENT OF GENERAL WAR UP TO THE END OF 1972

Report by the Joint Intelligence Committee

INTRODUCTION

The likelihood of war with the Soviet Union and the ways by which it might come about are examined in our reports JIC(65) 87 (Final) and JIC(66) 77 (Revised Final) in which we concluded that "the Soviet leaders will not deliberately start a general war and are most unlikely deliberately to start a limited war". We also concluded that war between the Soviet Union and the West could result from miscalculation, but that this was unlikely. Notwithstanding these assessments there is a requirement to provide views on how the Soviet armed forces might be employed in the event of general war.

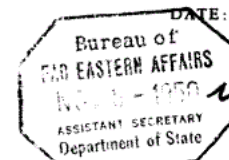
STANDARD NO. 64
TOP SECRET
Office Memorandum • UNITED STATES GOVERNMENT

TO : FE - Mr. Rusk

FROM : FE - Mr. Emerson

SUBJECT: Use of the Atomic Bomb in China

DATE: November 8,



If we use the atomic bomb in China it should be done only on the basis of over-riding military considerations. We should presumably have reached a point where the bomb is needed to produce decisive results either unobtainable by conventional warfare or obtainable only through expenditure of vastly greater numbers of men and quantities of material.

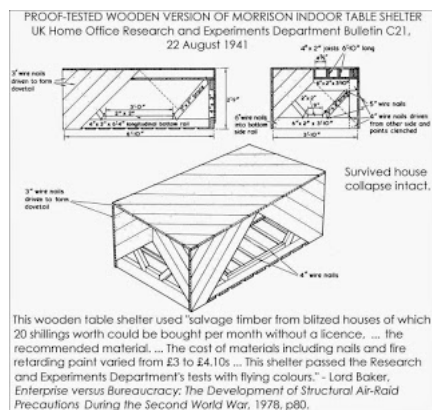
We should of course defer to a JCS estimate of the military effect of atomic bombing in China. One opinion would seem to be that China offers few suitable A-bomb targets, in view of scattered cities, low degree of industrialization, and immense area. Targets would presumably be 1) cities, 2) industrial complexes, and 3) concentrations of men and materiel in particular tactical situations. Obviously, the political effects, summarized below, would vary in degree according to the target. A repetition of Hiroshima and Nagasaki would produce the most damaging reaction, bombing of purely industrial targets the least. Nevertheless, we must consider that, regardless of the fact that military results achieved by atomic bombardment may be identical to those attained by conventional weapons, the effect on world opinion will be vastly different. The A-bomb has the status of a peculiar monster conceived by American cunning and its use by us, in whatever situation, would be exploited to our serious detriment.

HENCE, SUBMARINE SLBMs DETER ESCALATION IN WAR. HENCE, FEAR OF PROPAGANDA encourages conventional wars.

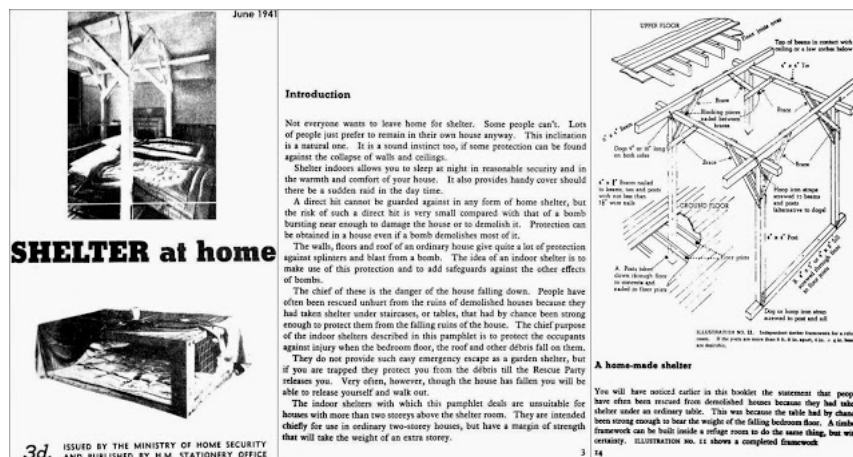
The era of secrecy on nuclear weapon capabilities since 1945 has been one in which millions of people have died in conventional wars, due to "pacifists" efforts to ban credible nuclear deterrence as a means of ending conventional wars.

Here is a positive suggestion. If the survivors of Hiroshima and the so-called "politically correct" of the Campaign for Nuclear Disarmament and the media *really* want to do something towards eliminating the megadeaths caused by and the squandering of money on hate based propaganda campaigns against the only proved deterrents we have, perhaps one day they could accept the truth and consider the possibility to back cheap, fact-proved, effective civil defence against most of the collateral damage and casualties, allowing relatively clean (low fission yield) tactical nuclear weapons to credibly deter conventional wars (the costly Trident-type strategic second strike capability can be to deter escalation, just as our mustard gas and gas masks in WWII deterred 12,000 tons of tabun nerve gas being sent over in bombers, V1 cruise missiles and V2 rockets).

Why don't nuclear weaponeers advocate the truth, too? Instead of silly "shoot the messenger" hate campaigns and tantrums, the facts should be rationally considered, if indeed concerns for nuclear weapons are real (rather than just political untruths).



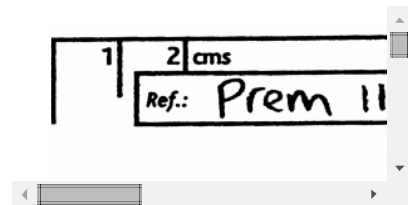
Professor Baker proof tested these cheap, effective indoor and outdoor WWII British shelters are ideal for use against conventional and nuclear war, hurricanes, tornadoes and earthquakes. Where houses were completely demolished, 97.5% survived in shelters. This fact has enormous utility for civil wars in Ukraine and Syria, if adequate warning sirens systems can be put in place.



Even if adequate warning systems and air raid sirens are not available or are unreliable, as for the V1 and particularly the V2 rocket attacks in WWII, then there is another system, again proof tested in war, which consists of indoor wooden scaffolding in offices, bedrooms, etc., to protect people against building collapse, as shown in the fully proof tested June 1941 official British handbook, *Shelter at Home*, which was the idea behind the 1980s *Protect and Survive* and *Domestic nuclear shelters, technical guidance manuals*. Edward Leader Williams who helped Lord Baker proof test indoor shelters in WWII, proposed indoor table type blast and fallout sheltering against the H bomb in 1955, in response to the Strath report.

posted by nige @ 8:37 p.m. 0 comments 

CONVENTIONAL WARS HAVE KILLED TENS OF MILLIONS OF PEOPLE, NUCLEAR WEAPONS CAN RAPIDLY DETER THIS REAL THREAT TO PEACE WITH MINIMAL CASUALTIES. 'During the critical period 8-15 February [1968], the U.S. command realized [that conventional] bombing was not sufficiently effective. ... The air campaign dropped over 110,000 tons of bombs and napalm on the area around Khe Sanh during the 77-day siege ... the most heavily bombed target in the history of conventional warfare.' – W. C. Yengst, S. J. Lukasik, and M. A. Jensen, *Nuclear Weapons that went to War*, SAID report DSWA-TR-97-25, September 1998 (quoted in the 2015 book by the secret *Capabilities of Nuclear Weapons* editor, Dr Harold L. Brode, *Nuclear Weapons in the Cold War*, page 287). [British Nuclear Test Civil Defence Research](#)



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CHANGE 1

Field Manual No 101-31-1

NUCLEAR WEAPONS EMPLOYMENT DOCTRINE AND PROCEDURES

Radius of vulnerability (emergency risk criterion: 5% combat ineffective)

Figure 54. Radii of Vulnerability.

CATEGORY	PERSONNEL (LL) IN— (Based on Governing Effect)				
	Open	Open Foxholes	APCs	Tanks	Earth Shelter
Radii listed are distances at which a 5 percent incidence of effect occurs. HOB used is $60W^{1/3}$ meters.					
Yield (KT)					
(Distances are in meters)					
0.1	700	600	600	500	300
1	1200	900	900	800	500
10	3200	1300	1300	1250	900
20	4000	1500	1450	1400	1000
100	8000	1900	1800	1800	1400
200	12000	2000	1900	1900	1500
300	14000	2100	1950	1950	1600

**Protective factor = ratio of
area of effect in the open,
area of effect for shelter**

**Example: for 300 kt, the protective
factor of open foxholes is equal to
 $(14,000)^2 / (2,100)^2 = 44$.**

Open	Open Foxholes	APCs	Tanks	Earth Shelter
1	1.36	1.36	1.96	5.44
1	1.78	1.78	2.25	5.76
1	6.06	6.06	6.55	12.6
1	7.11	7.61	8.16	16.0
1	17.7	19.8	19.8	32.7
1	36.0	39.9	39.9	64.0
1	44.4	51.5	51.5	76.6

Calculation of the injury-averting protective factors by simple open foxholes and earth shelter function of weapon yield. Most countermeasures are relatively ineffective against tactical nuclear weapons (due to the predominating neutron radiation effect at 0.1 kt yield), but are extremely effective against strategic nuclear weapons with yields of 100, 200 and 300 kt (protective factors of 44 to 76.6).

The definition of protective factor used here is the factor by which casualties numbers are reduced.

Richard P. Feynman, 'This Unscientific Age', in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

'Now, I say if a man is absolutely honest and wants to protect the populace from the effects of radioactivity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.'

"If a man reads or hears a criticism of anything in which he has an interest, watch ... if he shows concern with any question except 'is it true?' he thereby reveals that his own attitude is unscientific. Likewise if ... he judges an idea not on its merits but with reference to the author of it; if he criticizes it as 'heresy'; if he argues that authority must be right because it is authority ... The path of truth is paved with critical doubt, and lighted by the spirit of objective enquiry... the majority of people have resented what seems in retrospect to have been purely matter of fact ... nothing has aided the persistence of falsehood, and the evils resulting from it, more than the unwillingness of good people to admit the truth ... the tendency continues to be shocked by natural comment, and to hold certain things

too 'sacred' to think about. ... How rarely does one meet anyone whose first reaction to anything is to ask: 'is it true?' Yet, unless that is a man's natural reaction, it shows that truth is not uppermost in his mind, and unless it is, true progress is unlikely."

- Sir Basil Henry Liddell Hart, *Why Don't We Learn from History?*, PEN Books, 1944; revised edition, Allen and Unwin, 1972.

Civil defense countermeasures, to be taken seriously by the population, require the publication of solid facts with the scientific evidence to support those facts against political propaganda to the contrary. Secrecy over the effects of nuclear weapons tests does not hinder plutonium and missile production by rogue states, but it does hinder civil defense countermeasures, by permitting lying political propaganda to go unopposed (see linked post, here).

Terrorists successfully prey on the vulnerable. The political spreading of lies concerning threats and the alleged 'impossibility' of all countermeasures, terrorizing the population in order to 'justify' supposedly pro-peace disarmament policies in the 1920s-1930s, resulted in the secret rearmament of fascist states which were terrorizing the Jews and others, eventually leading to World War II.

Political exaggerations about nuclear weapons effects today:

(1) encourage terrorist states and other groups to secretly invest in such weapons to use either for political intimidation or for future use against countries which have no countermeasures, and

(2) falsely dismiss, in the eyes of the media and the public, cheap relatively effective countermeasures like civil defense and ABM.

Therefore, doom-mongering media lies *make us vulnerable to the proliferation threat* today in two ways, just as they led to both world wars:

(1) Exaggerations of offensive technology and a down-playing of simple countermeasures such as trenches, encouraged belligerent states to start World War I in the false belief that modern technology implied overwhelming firepower which would terminate the war quickly on the basis of offensive preparedness: if the facts about simple trench countermeasures against shelling and machine guns during the American Civil War had been properly understood, it would have been recognised by Germany that a long war based on munitions production and logistics would be necessary, and war would have been seen to be likely to lead to German defeat against countries with larger overseas allies and colonies that could supply munitions and the other resources required to win a long war.

(2) Exaggerations of aerial bombardment technology after World War I led to disarmament 'supported by' false claims that it was impossible to have any defense against a perceived threat of instant annihilation from thousands of aircraft carrying gas and incendiary bombs, encouraging fascists to secretly rearm in order to successfully take advantage of the fear and vulnerability caused by this lying political disarmament propaganda.

Contrived dismissal of civil defense by Marxist "Cambridge Scientists Anti-War Group" bigots: (a) appeased war-mongering enemies, and (b) maximised war mortality rates. Idealism kills. Super effective, fully proof-tested, cheap civil defense makes nuclear deterrence credible to stop conventional war devastation by avoiding collateral damage, tit-for-tat retaliation and escalation.

Historically, it has been proved that having weapons is not enough to guarantee a reasonable measure of safety from terrorism and rogue states; countermeasures are also needed, both to make any deterrent credible and to negate or at least mitigate the effects of a terrorist attack. Some people who wear seatbelts die in car crashes; some people who are taken to hospital in ambulances, even in peace-time, die. Sometimes, lifebelts and lifeboats cannot save lives at sea. This lack of a 100% success rate in saving lives doesn't disprove the value of everyday precautions or of hospitals and medicine. Hospitals don't lull motorists into a false sense of security, causing them to drive faster and cause more accidents. Like-minded 'arguments' against ABM and civil defense are similarly vacuous.

'As long as the threat from Iran persists, we will go forward with a missile system that is cost-effective and proven. If the Iranian threat is eliminated, we will have a stronger basis for security, and the driving force for missile-defense construction in Europe will be removed.'

- President Obama, Prague Castle, Czech Republic, 4 April 2009.

Before 9/11, Caspar Weinberger was quizzed by skeptical critics on the BBC News program *Talking Point*, Friday, May 4, 2001: Caspar Weinberger quizzed on new US Star Wars ABM plans:

‘The [ABM] treaty was in 1972 ... The theory ... supporting the ABM treaty [which prohibits ABM, thus making nations vulnerable to terrorism] ... that it will prevent an arms race ... is perfect nonsense because we have had an arms race all the time we have had the ABM treaty, and we have seen the greatest increase in proliferation of nuclear weapons that we have ever had. ... So the ABM treaty preventing an arms race is total nonsense. ...

‘You have to understand that without any defences whatever you are very vulnerable. **It is like saying we don't like chemical warfare - we don't like gas attacks - so we are going to give up and promise not to have any defences ever against them and that of course would mean then we are perfectly safe. ...**

‘The Patriot was not a failure in the Gulf War - the Patriot was one of the things which defeated the Scud and in effect helped us win the Gulf War. One or two of the shots went astray but that is true of every weapon system that has ever been invented. ...

‘The fact that a missile defence system wouldn't necessarily block a suitcase bomb is certainly not an argument for not proceeding with a missile defence when a missile that hits can wipe out hundreds of thousands of lives in a second. ...

‘The curious thing about it is that missile defence is not an offensive weapon system - missile defence cannot kill anybody. Missile defence can help preserve and protect your people and our allies, and the idea that you are somehow endangering people by having a defence strikes me almost as absurd as saying you endanger people by having a gas mask in a gas attack. ...

‘President Bush said that we were going ahead with the defensive system but we would make sure that nobody felt we had offensive intentions because we would accompany it by a unilateral reduction of our nuclear arsenal. It seems to me to be a rather clear statement that proceeding with the missile defence system would mean fewer arms of this kind.

‘You have had your arms race all the time that the ABM treaty was in effect and now you have an enormous accumulation and increase of nuclear weapons and that was your arms race promoted by the ABM treaty. Now if you abolish the ABM treaty you are not going to get another arms race - *you have got the arms already there* - and if you accompany the missile defence construction with the unilateral reduction of our own nuclear arsenal then it seems to me you are finally getting some kind of inducement to reduce these weapons.’

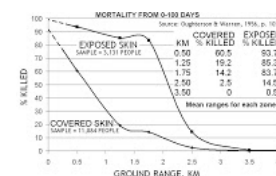
Before the ABM system is in place, and afterwards if ABM fails to be 100% effective in an attack, or is bypassed by terrorists using a bomb in a suitcase or in a ship, civil defense is required and can be effective at saving lives:

‘Paradoxically, the more damaging the effect, that is the farther out its lethality stretches, the more can be done about it, because in the last fall of its power it covers vast areas, where small mitigations will save very large numbers of people.’

- Peter Laurie, *Beneath the City Streets: A Private Inquiry into the Nuclear Preoccupations of Government*, Penguin, 1974.

‘The purpose of a book is to save people [the] time and effort of digging things out for themselves. ... we have tried to leave the reader with something tangible – what a certain number of calories, roentgens, etc., means in terms of an effect on the human being. ... we must think of the people we are writing for.’

– Dr Samuel Glasstone, DSc, letter dated 1 February 1957 to Colonel Dent L. Lay, Chief, Weapons Effects Division, U.S. Armed Forces Special Weapons Project, Washington, D.C., pages 2 and 4, concerning the preparation of *The Effects of Nuclear Weapons*.



Glasstone and Dolan stated in *The Effects of Nuclear Weapons* (1977), Table 12.17 on page 546, that the median distance in Hiroshima

for survival after 20 days was 0.12 miles for people in concrete buildings and 1.3 miles for people standing outdoors. Therefore the median distances for survival in modern city buildings and in the open differed by a factor of 11 for Hiroshima; the difference in areas was thus a factor of 11^2 or about 120. Hence, taking cover in modern city buildings reduces the casualty rates and the risks of being killed by a factor of 120 for Hiroshima conditions, contrary to popular media presented political propaganda that civil defence is hopeless. This would reduce 120,000 casualties to 1,000 casualties.

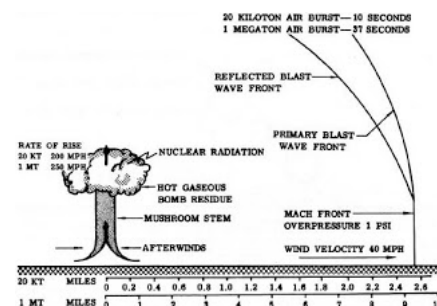
From Dr Glasstone's *Effects of Nuclear Weapons* (1962/64 ed., page 631): 'At distances between 0.3 and 0.4 mile from ground zero in Hiroshima the average survival rate, for at least 20 days after the nuclear explosion, was less than 20 percent. Yet in two reinforced concrete office buildings, at these distances, almost 90 percent of the nearly 800 occupants survived more than 20 days, although some died later of radiation injury. Furthermore, of approximately 3,000 school students who were in the open and unshielded within a mile of ground zero at Hiroshima, about 90 percent were dead or missing after the explosion. But of nearly 5,000 students in the same zone who were shielded in one way or another, only 26 percent were fatalities. ... survival in Hiroshima was possible in buildings at such distances that the overpressure in the open was 15 to 20 pounds per square inch. ... it is evident ... that the area over which protection could be effective in saving lives is roughly eight to ten times as great as that in which the chances of survival are small.'

Lord Mayhew, House of Lords debate on Civil Defence (General Local Authority Functions) Regulations, Hansard, vol. 444, cc. 523-49, 1 November 1983: '... if there had been effective civil defence at Hiroshima probably thousands of lives would have been saved and much human suffering would have been avoided. There is no question about it. ...'

Since the 1977 update by Glasstone and Dolan, extensive new updates to EM-1 for a further revised edition of *The Effects of Nuclear Weapons* have not actually been published with unlimited public distribution, due to President Carter's 1979 executive order which transferred responsibility for civil defense from the jurisdiction of the U.S. Department of Defense's Defense Civil Preparedness Agency to the new agency (which is not an Agency of the U.S. Department of Defense, and is not concerned with the analysis of nuclear weapons test effects data), the Federal Emergency Management Agency. However, the February 1997 U.S. Department of Defense's Defense Special Weapons Agency 0602715H RDT&E Budget Item Justification Sheet (R-2 Exhibit) states that a revision of Glasstone and Dolan's unclassified *Effects of Nuclear Weapons* was budgeted for 1997-9:

"FY 1997 Plans: ... Provide text to update Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... Update the unclassified textbook entitled, *The Effects of Nuclear Weapons*. ... Continue revision of Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... FY1999 Plans ... Disseminate updated *The Effects of Nuclear Weapons*."

The new publications are either classified or unclassified with limited distribution restrictions (e.g., Bridgman's *Introduction to the Physics of Nuclear Weapons Effects*, which includes several chapters on nuclear weapons design to enable initial radiation outputs to be calculated precisely) which prevents up-to-date basic nuclear effects information to justify civil defense against the latest nuclear threats from being widely disseminated; the books are printed for use only by government agencies. The problem with this approach is that widespread public understanding of the best information for civil defense countermeasures is prevented.



'The evidence from Hiroshima indicates that blast survivors, both injured and uninjured, in buildings later consumed by fire [caused by the blast

overturning charcoal braziers used for breakfast in inflammable wooden houses filled with easily ignitable bamboo furnishings and paper screens] were generally able to move to safe areas following the explosion. Of 130 major buildings studied by the U.S. Strategic Bombing Survey ... 107 were ultimately burned out ... Of those suffering fire, about 20 percent were burning after the first half hour. The remainder were consumed by fire spread, some as late as 15 hours after the blast. This situation is not unlike the one our computer-based fire spread model described for Detroit.’

- Defense Civil Preparedness Agency, U.S. Department of Defense, *DCPA Attack Environment Manual, Chapter 3: What the Planner Needs to Know About Fire Ignition and Spread*, report CPG 2-1A3, June 1973, Panel 27.

The Effects of the Atomic Bomb on Hiroshima, Japan, US Strategic Bombing Survey, Pacific Theatre, report 92, volume 2 (May 1947, secret):

Volume one, page 14:

“... the city lacked buildings with fire-protective features such as automatic fire doors and automatic sprinkler systems”, and pages 26-28 state the heat flash in Hiroshima was only:

“... capable of starting primary fires in exposed, easily combustible materials such as dark cloth, thin paper, or dry rotted wood exposed to direct radiation at distances usually within 4,000 feet of the point of detonation (AZ).”

Volume two examines the firestorm and the ignition of clothing by the thermal radiation flash in Hiroshima:

Page 24:

“Scores of persons throughout all sections of the city were questioned concerning the ignition of clothing by the flash from the bomb. ... Ten school boys were located during the study who had been in school yards about 6,200 feet east and 7,000 feet west, respectively, from AZ [air zero]. These boys had flash burns on the portions of their faces which had been directly exposed to rays of the bomb. The boys’ stories were consistent to the effect that their clothing, apparently of cotton materials, ‘smoked,’ but did not burst into flame. ... a boy’s coat ... started to smoulder from heat rays at 3,800 feet from AZ.” [Contrast this to the obfuscation and vagueness in Glasstone, *The Effects of Nuclear Weapons!*]

Page 88:

“Ignition of the City. ... Only directly exposed surfaces were flash burned. Measured from GZ, flash burns on wood poles were observed at 13,000 feet, granite was roughened or spalled by heat at 1,300 feet, and vitreous tiles on roofs were blistered at 4,000 feet. ... six persons who had been in reinforced-concrete buildings within 3,200 feet of air zero stated that black cotton blackout curtains were ignited by radiant heat ... dark clothing was scorched and, in some cases, reported to have burst into flame from flash heat [*although as the 1946 unclassified USSBS report admits, most immediately beat the flames out with their hands without sustaining injury, because the clothing was not drenched in gasoline, unlike peacetime gasoline tanker road accident victims*]

“... but a large proportion of over 1,000 persons questioned was in agreement that a great majority of the original fires was started by debris falling on kitchen charcoal fires, by industrial process fires, or by electric short circuits. Hundreds of fires were reported to have started in the centre of the city within 10 minutes after the explosion. Of the total number of buildings investigated [135 buildings are listed] 107 caught fire, and in 69 instances, the probable cause of initial ignition of the buildings or their contents was as follows: (1) 8 by direct radiated heat from the bomb (primary fire), (2) 8 by secondary sources, and (3) 53 by fire spread from exposed [wooden] buildings.”

‘It is true that the Soviets have tested nuclear weapons of a yield higher than that which we thought necessary, but the 100-megaton bomb of which they spoke two years ago does not and will not change the balance of strategic power. The United States has chosen, deliberately, to concentrate on more mobile and more efficient weapons, with lower but entirely sufficient yield ...’ - President John F. Kennedy in his television broadcast to the American public, 26 July 1963.

‘During World War II many large cities in England, Germany, and Japan were subjected to terrific attacks by high-explosive and incendiary bombs.

Yet, when proper steps had been taken for the protection of the civilian population and for the restoration of services after the bombing, there was little, if any, evidence of panic. It is the purpose of this book to state the facts concerning the atomic bomb, and to make an objective, scientific analysis of these facts. It is hoped that as a result, although it may not be feasible completely to allay fear, it will at least be possible to avoid panic.'

– **Dr George Gamow (the big bang cosmologist)**, Dr **Samuel Glasstone**, DSc (Executive Editor of the book), and **Professor Joseph O. Hirschfelder**, *The Effects of Atomic Weapons*, Chapter 1, p. 1, Paragraph 1.3, U.S. Department of Defense, September 1950.

'The consequences of a multiweapon nuclear attack would certainly be grave ... Nevertheless, recovery should be possible if plans exist and are carried out to restore social order and to mitigate the economic disruption.'

– **Philip J. Dolan**, editor of *Nuclear Weapons Employment* FM 101-31 (1963), *Capabilities of Nuclear Weapons* DNA-EM-1 (1972), and *The Effects of Nuclear Weapons* (1977), Stanford Research Institute, Appendix A of the **U.S. National Council on Radiological protection (NCRP) symposium *The Control of Exposure to the Public of Ionising Radiation in the Event of Accident or Attack*, 1981.**

'Suppose the bomb dropped on Hiroshima had been 1,000 times as powerful ... It could not have killed 1,000 times as many people, but at most the entire population of Hiroshima ... [regarding the hype about various nuclear "overkill" exaggerations] there is enough water in the oceans to drown everyone ten times.'

– **Professor Brian Martin, PhD (physics)**, 'The global health effects of nuclear war', *Current Affairs Bulletin*, Vol. 59, No. 7, December 1982, pp. 14-26.

In 1996, half a century after the nuclear detonations, data on cancers from the Hiroshima and Nagasaki survivors was published by D. A. Pierce et al. of the Radiation Effects Research Foundation, RERF (*Radiation Research* vol. 146 pp. 1-27; *Science* vol. 272, pp. 632-3) for 86,572 survivors, of whom 60% had received bomb doses of over 5 mSv (or 500 millirem in old units) suffering 4,741 cancers of which only 420 were due to radiation, consisting of 85 leukemias and 335 solid cancers.

'Today we have a population of 2,383 [radium dial painter] cases for whom we have reliable body content measurements. . . . All 64 bone sarcoma [cancer] cases occurred in the 264 cases with more than 10 Gy [1,000 rads], while no sarcomas appeared in the 2,119 radium cases with less than 10 Gy.'

– **Dr Robert Rowland, Director of the Center for Human Radiobiology**, *Bone Sarcoma in Humans Induced by Radium: A Threshold Response?*, *Proceedings of the 27th Annual Meeting, European Society for Radiation Biology, Radioprotection colloquies*, Vol. 32CI (1997), pp. 331-8.

Zbigniew Jaworowski, 'Radiation Risk and Ethics: Health Hazards, Prevention Costs, and Radiophobia', *Physics Today*, April 2000, pp. 89-90:

'... it is important to note that, given the effects of a few seconds of irradiation at Hiroshima and Nagasaki in 1945, a threshold near 200 mSv may be expected for leukemia and some solid tumors. [Sources: UNSCEAR, *Sources and Effects of Ionizing Radiation*, New York, 1994; W. F. Heidenreich, et al., *Radiat. Environ. Biophys.*, vol. 36 (1999), p. 205; and B. L. Cohen, *Radiat. Res.*, vol. 149 (1998), p. 525.] For a protracted lifetime natural exposure, a threshold may be set at a level of several thousand millisieverts for malignancies, of 10 grays for radium-226 in bones, and probably about 1.5-2.0 Gy for lung cancer after x-ray and gamma irradiation. [Sources: G. Jaikrishan, et al., *Radiation Research*, vol. 152 (1999), p. S149 (for natural exposure); R. D. Evans, *Health Physics*, vol. 27 (1974), p. 497 (for radium-226); H. H. Rossi and M. Zaider, *Radiat. Environ. Biophys.*, vol. 36 (1997), p. 85 (for radiogenic lung cancer).] The hormetic effects, such as a decreased cancer incidence at low doses and increased longevity, may be used as a guide for estimating practical thresholds and for setting standards. ...

'Though about a hundred of the million daily spontaneous DNA damages per cell remain unrepaired or misrepaired, apoptosis, differentiation, necrosis, cell cycle regulation, intercellular interactions, and the immune system remove about 99% of the altered cells. [Source: R. D. Stewart, *Radiation Research*, vol. 152 (1999), p. 101.] ...

'[Due to the Chernobyl nuclear accident in 1986] as of 1998 (according to UNSCEAR), a total of 1,791 thyroid cancers in children had been registered. About 93% of the youngsters have a prospect of full recovery. [Source: C. R. Moir and R. L. Telander, *Seminars in Pediatric Surgery*,

vol. 3 (1994), p. 182.] ... The highest average thyroid doses in children (177 mGy) were accumulated in the Gomel region of Belarus. The highest incidence of thyroid cancer (17.9 cases per 100,000 children) occurred there in 1995, which means that the rate had increased by a factor of about 25 since 1987.

‘This rate increase was probably a result of improved screening [not radiation!]. Even then, the incidence rate for occult thyroid cancers was still a thousand times lower than it was for occult thyroid cancers in nonexposed populations (in the US, for example, the rate is 13,000 per 100,000 persons, and in Finland it is 35,600 per 100,000 persons). Thus, given the prospect of improved diagnostics, there is an enormous potential for detecting yet more [fictitious] "excess" thyroid cancers. In a study in the US that was performed during the period of active screening in 1974-79, it was determined that the incidence rate of malignant and other thyroid nodules was greater by 21-fold than it had been in the pre-1974 period. [Source: Z. Jaworowski, *21st Century Science and Technology*, vol. 11 (1998), issue 1, p. 14.]’

‘Professor **Edward Lewis** used data from four independent populations exposed to radiation to demonstrate that the incidence of leukemia was linearly related to the accumulated dose of radiation. ... Outspoken scientists, including Linus Pauling, used **Lewis**’s risk estimate to inform the public about the danger of nuclear fallout by estimating the number of leukemia deaths that would be caused by the test detonations. In May of 1957 **Lewis**’s analysis of the radiation-induced human leukemia data was published as a lead article in *Science* magazine. In June he presented it before the Joint Committee on Atomic Energy of the US Congress.’ – Abstract of thesis by Jennifer Caron, *Edward Lewis and Radioactive Fallout: the Impact of Caltech Biologists Over Nuclear Weapons Testing in the 1950s and 60s*, Caltech, January 2003.

Dr John F. Loutit of the Medical Research Council, Harwell, England, in 1962 wrote a book called *Irradiation of Mice and Men* (University of Chicago Press, Chicago and London), discrediting the pseudo-science from geneticist **Edward Lewis** on pages 61, and 78-79:

‘... Mole [R. H. Mole, *Brit. J. Radiol.*, v32, p497, 1959] gave different groups of mice an integrated total of 1,000 r of X-rays over a period of 4 weeks. But the dose-rate - and therefore the radiation-free time between fractions - was varied from 81 r/hour intermittently to 1.3 r/hour continuously. The incidence of leukemia varied from 40 per cent (within 15 months of the start of irradiation) in the first group to 5 per cent in the last compared with 2 per cent incidence in irradiated controls. ...

‘What **Lewis** did, and which I have not copied, was to include in his table another group - spontaneous incidence of leukemia (Brooklyn, N.Y.) - who are taken to have received only natural background radiation throughout life at the very low dose-rate of 0.1-0.2 rad per year: the best estimate is listed as 2×10^{-6} like the others in the table. But the value of 2×10^{-6} was not calculated from the data as for the other groups; it was merely adopted. By its adoption and multiplication with the average age in years of Brooklynners - 33.7 years and radiation dose per year of 0.1-0.2 rad - a mortality rate of 7 to 13 cases per million per year due to background radiation was deduced, or some 10-20 per cent of the observed rate of 65 cases per million per year. ...

‘All these points are very much against the basic hypothesis of **Lewis** of a linear relation of dose to leukemic effect irrespective of time. Unhappily it is not possible to claim for **Lewis**’s work as others have done, “It is now possible to calculate - within narrow limits - how many deaths from leukemia will result in any population from an increase in fall-out or other source of radiation” [Leading article in *Science*, vol. 125, p. 963, 1957]. This is just wishful journalese.

‘The burning questions to me are not what are the numbers of leukemia to be expected from atom bombs or radiotherapy, but what is to be expected from natural background Furthermore, to obtain estimates of these, I believe it is wrong to go to [1950s inaccurate, dose rate effect ignoring, data from] atom bombs, where the radiations are qualitatively different [i.e., including effects from neutrons] and, more important, the dose-rate outstandingly different.’

Samuel Glasstone and Philip J. Dolan, *The Effects of Nuclear Weapons*, 3rd ed., 1977, pp. 611-3:

‘From the earlier studies of radiation-induced mutations, made with fruitflies [by Nobel Laureate Hermann J. Muller and other geneticists who worked on plants, who falsely hyped their insect and plant data as valid for mammals like humans during the June 1957 U.S. Congressional Hearings on fallout effects], it appeared that the number (or frequency) of mutations in a given population ... is proportional to the total dose ... More recent experiments with mice, however, have shown that these conclusions need to be revised, at least for mammals. [*Mammals are biologically closer to humans, in respect to DNA repair mechanisms, than short-lived insects whose life cycles are too small to have forced the evolutionary development of advanced DNA repair mechanisms, unlike mammals that need to survive for decades before reproducing.*] When exposed to X-rays or

gamma rays, the mutation frequency in these animals has been found to be dependent on the exposure (or dose) rate ...

‘At an exposure rate of 0.009 roentgen per minute [0.54 R/hour], the total mutation frequency in female mice is indistinguishable from the spontaneous frequency. [Emphasis added.] There thus seems to be an exposure-rate threshold below which radiation-induced mutations are absent ... with adult female mice ... a delay of at least seven weeks between exposure to a substantial dose of radiation, either neutrons or gamma rays, and conception causes the mutation frequency in the offspring to drop almost to zero. ... **recovery** in the female members of the population would bring about a substantial reduction in the ‘load’ of mutations in subsequent generations.’

George Bernard Shaw cynically explains groupthink brainwashing bias:

‘We cannot help it because we are so constituted that we always believe finally what we wish to believe. The moment we want to believe something, we suddenly see all the arguments for it and become blind to the arguments against it. The moment we want to disbelieve anything we have previously believed, we suddenly discover not only that there is a mass of evidence against, but that this evidence was staring us in the face all the time.’

From the essay titled ‘What is Science?’ by Professor Richard P. Feynman, presented at the fifteenth annual meeting of the National Science Teachers Association, 1966 in New York City, and published in *The Physics Teacher*, vol. 7, issue 6, 1968, pp. 313-20:

‘... great religions are dissipated by following form without remembering the direct content of the teaching of the great leaders. In the same way, it is possible to follow form and call it science, but that is pseudo-science. In this way, we all suffer from the kind of tyranny we have today in the many institutions that have come under the influence of pseudoscientific advisers.

‘We have many studies in teaching, for example, in which people make observations, make lists, do statistics, and so on, but these do not thereby become established science, established knowledge. They are merely an imitative form of science analogous to the South Sea Islanders’ airfields - radio towers, etc., made out of wood. The islanders expect a great airplane to arrive. They even build wooden airplanes of the same shape as they see in the foreigners’ airfields around them, but strangely enough, their wood planes do not fly. The result of this pseudoscientific imitation is to produce experts, which many of you are. ... you teachers, who are really teaching children at the bottom of the heap, can maybe doubt the experts. As a matter of fact, I can also define science another way: Science is the belief in the ignorance of experts.’

Richard P. Feynman, ‘This Unscientific Age’, in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

‘Now, I say if a man is absolutely honest and wants to protect the populace from the effects of radioactivity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.’

Feynman is *not* making a point about low level radiation effects, but about the politics of ignoring the massive natural background radiation dose, while provoking hysteria over much smaller measured fallout pollution radiation doses. Why is the anti-nuclear lobby so concerned about banning nuclear energy - which is not possible even in principle since most of our nuclear radiation is from the sun and from supernova debris contaminating the Earth from the explosion that created the solar system circa 4,540 million years ago - when they could cause much bigger radiation dose reductions to the population by concentrating on the bigger radiation source, natural background radiation. It is possible to shield natural background radiation by the air, e.g. by moving the population of high altitude cities to lower altitudes where there is more air between the people and outer space, or banning the use of high-altitude jet aircraft. The anti-nuclear lobby, as Feynman stated back in the 1960s, didn't crusade to reduce the bigger dose from background radiation. Instead they chose to argue against the *much smaller* doses from fallout pollution. Feynman's argument is still today falsely interpreted as a political statement, when it is actually exposing pseudo-science and countering political propaganda. It is still ignored by the media. It has been pointed out by Senator Hickenlooper on page 1060 of the May-June 1957 U.S. Congressional Hearings before the Special Subcommittee on Radiation of the Joint Committee on Atomic Energy, *The Nature of Radioactive Fallout and Its Effects on Man*:

‘I presume all of us would earnestly hope that we never had to test atomic weapons ... but by the same token I presume that we want to save thousands of lives in this country every year and we could just abolish the manufacture of [road accident causing] automobiles ...’

Dihydrogen monoxide is a potentially very dangerous chemical containing hydrogen and oxygen which has caused numerous severe burns by scalding

and deaths by drowning, contributes to the greenhouse effect, accelerates corrosion and rusting of many metals, and contributes to the erosion of our natural landscape: 'Dihydrogen monoxide (DHMO) is colorless, odorless, tasteless, and kills uncounted thousands of people every year. Most of these deaths are caused by accidental inhalation of DHMO, but the dangers of dihydrogen monoxide do not end there. Prolonged exposure to its solid form causes severe tissue damage. Symptoms of DHMO ingestion can include excessive sweating and urination, and possibly a bloated feeling, nausea, vomiting and body electrolyte imbalance. For those who have become dependent, DHMO withdrawal means certain death.'

From the site for the petition against dihydrogen monoxide: **'Please sign this petition and help stop This Invisible Killer. Get the government to do something now. ... Contamination Is Reaching Epidemic Proportions! Quantities of dihydrogen monoxide have been found in almost every stream, lake, and reservoir in America today. But the pollution is global, and the contaminant has even been found in Antarctic ice. DHMO has caused millions of dollars of property damage in the Midwest, and recently California.'**

A recent example of the pseudoscientific radiation 'education' masquerading as science that Feynman (quoted above) objected to in the 1960s was published in 2009 in an article called 'The proportion of childhood leukaemia incidence in Great Britain that may be caused by natural background ionizing radiation' in *Leukemia*, vol. 23 (2009), pp. 770–776, which falsely asserts - in contradiction to the evidence that the no-threshold model is *contrary* to Hiroshima and Nagasaki data: 'Risk models based primarily on studies of the Japanese atomic bomb survivors imply that low-level exposure to ionizing radiation, including ubiquitous natural background radiation, also raises the risk of childhood leukaemia. Using two sets of recently published leukaemia risk models and estimates of natural background radiation red-bone-marrow doses received by children, about 20% of the cases of childhood leukaemia in Great Britain are predicted to be attributable to this source.' The authors of this pseudoscience which is the opposite of the facts are R. Wakeford (Dalton Nuclear Institute, University of Manchester, Manchester, UK), G. M. Kendall (Childhood Cancer Research Group, Oxford, UK), and M. P. Little (Department of Epidemiology and Public Health, Imperial College, London, UK). It is disgusting and sinful that the facts about childhood leukemia are being lied on so blatantly for non-scientific purposes, and it is to be hoped that these leukemia investigators will either correct their errors or alternatively be banned from using scientific literature to promote false dogma for deception until they mend the error of their ways and repent their sins in this matter.

Protein P53, discovered only in 1979, is encoded by gene TP53, which occurs on human chromosome 17. P53 also occurs in other mammals including mice, rats and dogs. P53 is one of the proteins which continually repairs breaks in DNA, which easily breaks at body temperature: the DNA in each cell of the human body suffers at least two single strand breaks every second, and one double strand (i.e. complete double helix) DNA break occurs at least once every 2 hours (5% of radiation-induced DNA breaks are double strand breaks, while 0.007% of spontaneous DNA breaks at body temperature are double strand breaks)! Cancer occurs when several breaks in DNA happen to occur by chance at nearly the same time, giving several loose strand ends at once, which repair proteins like P53 then repair incorrectly, causing a mutation which can be proliferated somatically. This cannot occur when only one break occurs, because only two loose ends are produced, and P53 will reattach them correctly. But if low-LET ionising radiation levels are increased to a certain extent, causing more single strand breaks, P53 works faster and is able deal with faster breaks as they occur, so that multiple broken strand ends do not arise. This prevents DNA strands being repaired incorrectly, and prevents cancer - a result of mutation caused by faults in DNA - from arising. Too much radiation of course overloads the P53 repair mechanism, and then it cannot repair breaks as they occur, so multiple breaks begin to appear and loose ends of DNA are wrongly connected by P53, causing an increased cancer risk.

1. DNA-damaging free radicals are equivalent to a source of sparks which is always present naturally.
2. Cancer is equivalent the fire you get if the sparks are allowed to ignite the gasoline, i.e. if the free radicals are allowed to damage DNA without the damage being repaired.
3. Protein P53 is equivalent to a fire suppression system which is constantly damping out the sparks, or repairing the damaged DNA so that cancer doesn't occur.

In this way of thinking, the 'cause' of cancer will be down to a failure of a DNA repairing enzyme like protein P53 to repair the damage.

Dr Jane Orient, 'Homeland Security for Physicians', *Journal of American Physicians and Surgeons*, vol. 11, number 3, Fall 2006, pp. 75-9:

'In the 1960s, a group of activist physicians called Physicians for Social Responsibility (PSR) undertook to "educate the medical profession and the

world about the dangers of nuclear weapons," beginning with a series of articles in the *New England Journal of Medicine*. [Note that journal was publishing information for anti-civil defense propaganda back in 1949, e.g. the article in volume 241, pp. 647-53 of *New England Journal of Medicine* which falsely suggests that civil defense in nuclear war would be hopeless because a single burned patient in 1947 with 40% body area burns required 42 oxygen tanks, 36 pints of plasma, 40 pints of whole blood, 104 pints of fluids, 4,300 m of gauze, 3 nurses and 2 doctors. First, only unclothed persons in direct line of sight without shadowing can get 40% body area burns from thermal radiation, second, duck and cover offers protection in a nuclear attack warning, and G. V. LeRoy had already published, two years earlier, in *J.A.M.A.*, volume 134, 1947, pp. 1143-8, that less than 5% of burns in Hiroshima and Nagasaki were caused by building and debris fires. In medicine it is always possible to expend vast resources on patients who are fatally injured. In a mass casualty situation, doctors should not give up just because they don't have unlimited resources; as at Hiroshima and Nagasaki, they would need to do their best with what they have.] On its website, www.psr.org, the group boasts that it "led the campaign to end atmospheric nuclear testing." With this campaign, the linear no-threshold (LNT) theory of radiation carcinogenesis became entrenched. It enabled activists to calculate enormous numbers of potential casualties by taking a tiny risk and multiplying it by the population of the earth. As an enduring consequence, the perceived risks of radiation are far out of proportion to actual risks, causing tremendous damage to the American nuclear industry. ... Efforts to save lives were not only futile, but unethical: Any suggestion that nuclear war could be survivable increased its likelihood and was thus tantamount to warmongering, PSR spokesmen warned. ...

'For the mindset that engendered and enables this situation, which jeopardizes the existence of the United States as a nation as well as the lives of millions of its citizens, some American physicians and certain prestigious medical organizations bear a heavy responsibility.

'Ethical physicians should stand ready to help patients to the best of their ability, and not advocate sacrificing them in the name of a political agenda. **Even very basic knowledge, especially combined with simple, inexpensive advance preparations, could save countless lives.'**

Dr Theodore B. Taylor, *Proceedings of the Second Interdisciplinary Conference on Selected Effects of a General War*, DASIAC Special Report 95, July 1969, vol. 2, DASA-2019-2, AD0696959, page 298 (also [linked here](#)):

'I must just say that as far as I'm concerned I have had some doubts about whether we should have had a civil defense program in the past. I have no doubt whatsoever now, for this reason, that I've seen **ways in which the deterrent forces can fail to hold things off, so that no matter what our national leaders do, criminal organizations, what have you, groups of people over which we have no control whatsoever, can threaten other groups of people.'**

This point of Taylor is the key fact on the morality. Suppose we disarm and abandon nuclear power. That won't stop fallout from a war, terrorists, or a foreign reactor blast from coming. Civil defence knowledge is needed. Even when America has ABM, it will be vulnerable to wind carried fallout. No quantity of pacifist hot air will protect people against radiation.

Charles J. Hitch and Roland B. McKean of the RAND Corporation in their 1960 book *The Economics of Defense in the Nuclear Age*, Harvard University Press, Massachusetts, pp. 310-57:

'With each side possessing only a small striking force, a small amount of cheating would give one side dominance over the other, and the incentive to cheat and prepare a preventative attack would be strong ... With each side possessing, say, several thousand missiles, a vast amount of cheating would be necessary to give one side the ability to wipe out the other's striking capability. ... the more extensive a disarmament agreement is, the smaller the force that a violator would have to hide in order to achieve complete domination. Most obviously, "the abolition of the weapons necessary in a general or 'unlimited' war" would offer the most insuperable obstacles to an inspection plan, since the violator could gain an overwhelming advantage from the concealment of even a few weapons.'

Disarmament after World War I caused the following problem which led to World War II (reported by Winston S. Churchill in the London Daily Express newspaper of November 1, 1934):

'Germany is arming secretly, illegally and rapidly. A reign of terror exists in Germany to keep secret the feverish and terrible preparations they are making.'

British Prime Minister Thatcher's address to the United Nations General Assembly on disarmament on 23 June 1982, where she pointed out that in

Nuclear deterrence of conventional warfare, and protection against collateral civilian damage and contamination

the years since the nuclear attacks on Hiroshima and Nagasaki, 10 million people had been killed by 140 non-nuclear conflicts:

‘The fundamental risk to peace is not the existence of weapons of particular types. It is the disposition on the part of some states to impose change on others by resorting to force against other nations ... Aggressors do not start wars because an adversary has built up his own strength. They start wars because they believe they can gain more by going to war than by remaining at peace.’

J. D. Culshaw, the then Director of the U.K. Home Office Scientific Advisory Branch, stated in his article in the Scientific Advisory Branch journal *Fission Fragments*, September 1972 (issue No. 19), classified 'Restricted':

'Apart from those who don't want to know or can't be bothered, there seem to be three major schools of thought about the nature of a possible Third World War ...

* 'The first group think of something like World War II but a little worse ...

* '... the second of World War II but very much worse ...

* 'and the third group think in terms of a catastrophe ...

'When the Armageddon concept is in favour, the suggestion that such problems exist leads to "way out" research on these phenomena, and it is sufficient to mention a new catastrophic threat [e.g., 10 years later this was done by Sagan with "nuclear winter" hype, which turned out to be fake because modern concrete cities can't produce firestorms like 1940s wooden-built areas of Hamburg, Dresden and Hiroshima] to stimulate research into the possibilities of it arising. The underlying appeal of this concept is that if one could show that the execution of all out nuclear, biological or chemical warfare would precipitate the end of the world, no one but a mad man would be prepared to initiate such a war. [However, as history proves, plenty of mad men end up gaining power and leading countries into wars.]'

J. K. S. Clayton, then Director of the U.K. Home Office Scientific Advisory Branch, stated in his introduction, entitled *The Challenge - Why Home Defence?*, to the 1977 Home Office Scientific Advisory Branch *Training Manual for Scientific Advisers*:

'Since 1945 we have had nine wars - in Korea, Malaysia and Vietnam, between China and India, China and Russia, India and Pakistan and between the Arabs and Israelis on three occasions. We have had confrontations between East and West over Berlin, Formosa and Cuba. There have been civil wars or rebellions in no less than eleven countries and invasions or threatened invasions of another five. Whilst it is not suggested that all these incidents could have resulted in major wars, they do indicate the aptitude of mankind to resort to a forceful solution of its problems, sometimes with success. ...'

It is estimated that Mongol invaders exterminated 35 million Chinese between 1311-40, without modern weapons. Communist Chinese killed 26.3 million dissenters between 1949 and May 1965, according to detailed data compiled by the Russians on 7 April 1969. The Soviet communist dictatorship killed 40 million dissenters, mainly owners of small farms, between 1917-59. Conventional (non-nuclear) air raids on Japan killed 600,000 during World War II. The single incendiary air raid on Tokyo on 10 March 1945 killed 140,000 people (more than the total for nuclear bombs on Hiroshima and Nagasaki combined) at much less than the \$2 billion expense of the Hiroshima and Nagasaki nuclear bombs! Non-nuclear air raids on Germany during World War II killed 593,000 civilians.

House of Lords debate *Nuclear Weapons: Destructive Power*, published in Hansard, 14 June 1988:

Lord Hailsham of Saint Marylebone: ‘My Lords, if we are going into the question of lethality of weapons and seek thereby to isolate the nuclear as distinct from the so-called conventional range, is there not a danger that the public may think that Vimy, Passchendaele and Dresden were all right—sort of tea parties—and that nuclear war is something which in itself is unacceptable?’

Lord Trefgarne: ‘My Lords, the policy of making Europe, or the rest of the world, safe for conventional war is not one that I support.’

House of Commons debate *Civil Defence* published in Hansard, 26 October 1983:

Mr. Bill Walker (Tayside, North): ‘I remind the House that more people died at Stalingrad than at Hiroshima or Nagasaki. Yet people talk about fighting a conventional war in Europe as if it were acceptable. One rarely sees demonstrations by the so-called peace

movement against a conventional war in Europe, but it could be nothing but ghastly and horrendous. The casualties would certainly exceed those at Stalingrad, and that cannot be acceptable to anyone who wants peace'

On 29 October 1982, Thatcher stated of the Berlin Wall: 'In every decade since the war the Soviet leaders have been reminded that their pitiless ideology only survives because it is maintained by force. But the day comes when the anger and frustration of the people is so great that force cannot contain it. Then the edifice cracks: the mortar crumbles ... one day, liberty will dawn on the other side of the wall.'

On 22 November 1990, she said: 'Today, we have a Europe ... where the threat to our security from the overwhelming conventional forces of the Warsaw Pact has been removed; where the Berlin Wall has been torn down and the Cold War is at an end. These immense changes did not come about by chance. They have been achieved by strength and resolution in defence, and by a refusal ever to be intimidated.'

'The case for civil defence stands regardless of whether a nuclear deterrent is necessary or not. ... Even if the U.K. were not itself at war, we would be as powerless to prevent fallout from a nuclear explosion crossing the sea as was King Canute to stop the tide.' - U.K. Home Office leaflet, Civil Defence, 1982.

'... peace cannot be guaranteed absolutely. Nobody can be certain, no matter what policies this or any other Government were to adopt, that the United Kingdom would never again be attacked. Also we cannot tell what form such an attack might take. Current strategic thinking suggests that if war were to break out it would start with a period of conventional hostilities of uncertain duration which might or might not escalate to nuclear conflict. ... while nuclear weapons exist there must always be a chance, however small, that they will be used against us [like gas bombs in World War II]. ... as a consequence of war between other nations in which we were not involved fall out from nuclear explosions could fall on a neutral Britain. ... conventional war is not the soft option that is sometimes suggested. It is also too easily forgotten that in World War II some 50 million people died and that conventional weapons have gone on killing people ever since 1945 without respite.' - - **The Minister of State, Scottish Office (Lord Gray of Contin), House of Lords debate on Civil Defence (General Local Authority Functions) Regulations, Hansard, vol. 444, cc. 523-49, 1 November 1983.**

'All of us are living in the light and warmth of a huge hydrogen bomb, 860,000 miles across and 93 million miles away, which is in a state of continuous explosion.' - Dr Isaac Asimov.

'Dr Edward Teller remarked recently that the origin of the earth was somewhat like the explosion of the atomic bomb...' - Dr Harold C. Urey, *The Planets: Their Origin and Development*, Yale University Press, New Haven, 1952, p. ix.

'But compared with a supernova a hydrogen bomb is the merest trifle. For a supernova is equal in violence to about a million million million million hydrogen bombs all going off at the same time.' - Sir Fred Hoyle (1915-2001), *The Nature of the Universe*, Pelican Books, London, 1963, p. 75.

'In fact, physicists find plenty of interesting and novel physics in the environment of a nuclear explosion. Some of the physical phenomena are valuable objects of research, and promise to provide further understanding of nature.' - Dr Harold L. Brode, The RAND Corporation, 'Review of Nuclear Weapons Effects,' *Annual Review of Nuclear Science*, Volume 18, 1968, pp. 153-202.

'It seems that similarities do exist between the processes of formation of single particles from nuclear explosions and formation of the solar system from the debris of a [4 x 10²⁸ megatons of TNT equivalent, type Ia] supernova explosion. We may be able to learn much more about the origin of the earth, by further investigating the process of radioactive fallout from the nuclear weapons tests.' - **Dr Paul K. Kuroda (1917-2001)**, University of Arkansas, 'Radioactive Fallout in Astronomical Settings: Plutonium-244 in the Early Environment of the Solar System,' pages 83-96 of ***Radionuclides in the Environment: A Symposium Sponsored By the Division of Nuclear Chemistry and Technology At the 155th Meeting of the American Chemical Society, San Francisco, California, April 1-3, 1968***, edited by Symposium Chairman Dr Edward C. Freiling (1922-2000) of the U.S. Naval Radiological Defense Laboratory, Advances in Chemistry Series No. 93, American Chemical Society, Washington, D.C., 1970.

Dr Paul K. Kuroda (1917-2001) in 1956 correctly predicted the existence of water-moderated natural nuclear reactors in flooded uranium ore seams, which were discovered in 1972 by French physicist Francis Perrin in three ore deposits at Oklo in Gabon, where sixteen sites operated as natural nuclear reactors with self-sustaining nuclear fission 2,000 million years ago, each lasting several hundred thousand years, averaging 100 kW. The radioactive waste they generated remained in situ for a period of 2,000,000,000 years without escaping. They were discovered during

investigations into why the U-235 content of the uranium in the ore was only 0.7171% instead of the normal 0.7202%. Some of the ore, in the middle of the natural reactors, had a U-235 isotopic abundance of just 0.440%. Kuroda's brilliant paper is entitled, 'On the Nuclear Physical Stability of the Uranium Minerals', published in the *Journal of Chemical Physics*, vol. 25 (1956), pp. 781–782 and 1295–1296.

A type Ia supernova explosion, always yielding 4×10^{28} megatons of TNT equivalent, results from the critical mass effect of the collapse of a white dwarf as soon as its mass exceeds 1.4 solar masses due to matter falling in from a companion star. The degenerate electron gas in the white dwarf is then no longer able to support the pressure from the weight of gas, which collapses, thereby releasing enough gravitational potential energy as heat and pressure to cause the fusion of carbon and oxygen into heavy elements, creating massive amounts of radioactive nuclides, particularly intensely radioactive nickel-56, but half of all other nuclides (including uranium and heavier) are also produced by the **'R' (rapid) process of successive neutron captures by fusion products in supernovae explosions**. Type Ia supernovae occur typically every 400 years in the Milky Way galaxy. On 4 July 1054, Chinese astronomers observed in the sky (without optical instruments) the bright supernova in the constellation Taurus which today is still visible as the Crab Nebula through telescopes. The Crab Nebula debris has a diameter now of 7 light years and is still expanding at 800 miles/second. The supernova debris shock wave triggers star formation when it encounters hydrogen gas in space by compressing it and seeding it with debris; bright stars are observed in the Orion Halo, the 300 light year diameter remains of a supernova. It is estimated that when the solar system was forming 4,540 million years ago, a supernova occurred around 100 light years away, and the heavy radioactive debris shock wave expanded at 1,000 miles/second. Most of the heavy elements including iron, silicon and calcium in the Earth and people are the stable end products of originally radioactive decay chains from the space burst fallout of a 7×10^{26} megatons thermonuclear explosion, created by fusion and successive neutron captures after the implosion of a white dwarf; a supernova explosion.

How would a 10^{55} megaton hydrogen bomb explosion differ from the **big bang**? Ignorant answers biased in favour of curved spacetime (ignoring quantum gravity!) abound, such as claims that explosions can't take place in 'outer space' (disagreeing with the facts from nuclear space bursts by Russia and America in 1962, not to mention natural supernova explosions in space!) and that explosions produce sound waves in air by definition! There are indeed major differences in the nuclear reactions between the big bang and a nuclear bomb. But it is helpful to notice the solid physical fact that implosion systems suggest the mechanism of gravitation: in implosion, TNT is well-known to produce an *inward* force on a bomb core, but Newton's 3rd law says there is an equal and opposite reaction force *outward*. In fact, you can't have a radially outward force without an inward reaction force! It's the rocket principle. The rocket accelerates (with force $F = ma$) *forward* by virtue of the recoil from accelerating the exhaust gas (with force $F = -ma$) in the *opposite* direction! Nothing massive accelerates without an equal and opposite reaction force. Applying this *fact* to the **measured $6 \times 10^{-10} \text{ ms}^{-2} \sim Hc$ cosmological acceleration of matter radially outward** from observers in the universe which **was predicted accurately in 1996** and later observationally discovered in 1999 (by Perlmutter, et al.), we find an outward force $F = ma$ and inward reaction force by the 3rd law. **The inward force allows quantitative predictions, and is mediated by gravitons, predicting gravitation in a checkable way (unlike string theory, which is just a landscape of 10^{500} different perturbative theories and so can't make any falsifiable predictions about gravity)**. So it seems as if nuclear explosions do indeed provide helpful analogies to natural features of the world, and the mainstream lambda-CDM model of cosmology - with its force-fitted unobserved *ad hoc* speculative 'dark energy' - ignores and sweeps under the rug major quantum gravity effects which increase the physical understanding of particle physics, particularly force unification and the relation of gravitation to the existing electroweak SU(2) x U(1) section of the Standard Model of fundamental forces.

Richard Lieu, Physics Department, University of Alabama, 'Lambda-CDM cosmology: how much suppression of credible evidence, and does the model really lead its competitors, using all evidence?', <http://arxiv.org/abs/0705.2462>.

Even Einstein grasped the possibility that general relativity's lambda-CDM model is at best just a classical approximation to quantum field theory, at the end of his life when he wrote to Besso in 1954:

'I consider it quite possible that physics cannot be based on the [classical differential equation] field principle, i.e., on continuous structures. In that case, nothing remains of my entire castle in the air, [non-quantum] gravitation theory included ...'

'Science is the organized skepticism in the reliability of expert opinion.' - Professor Richard P. Feynman (quoted by Professor Lee Smolin, *The Trouble with Physics*, Houghton-Mifflin, New York, 2006, p. 307).

'The expression of dissenting views may not seem like much of a threat to a powerful organization, yet sometimes it triggers an amazingly hostile

response. The reason is that a single dissenter can puncture an illusion of unanimity. ... Among those suppressed have been the engineers who tried to point out problems with the Challenger space shuttle that caused it to blow up. More fundamentally, suppression is a denial of the open dialogue and debate that are the foundation of a free society. Even worse than the silencing of dissidents is the chilling effect such practices have on others. For every individual who speaks out, numerous others decide to play it safe and keep quiet. More serious than external censorship is the problem of self-censorship.'

— Professor Brian Martin, University of Wollongong, 'Stamping Out Dissent', Newsweek, 26 April 1993, pp. 49-50

In 1896, Sir James Mackenzie-Davidson asked Wilhelm Röntgen, who discovered X-rays in 1895: 'What did you think?' Röntgen replied: 'I did not think, I investigated.' The reason? Cathode ray expert J. J. Thomson in 1894 saw glass fluorescence far from a tube, but due to prejudice (expert opinion) he avoided investigating that X-ray evidence! 'Science is the organized skepticism in the reliability of expert opinion.' - Richard Feynman, in Lee Smolin, *The Trouble with Physics*, Houghton-Mifflin, 2006, p. 307.

Mathematical symbols in this blog: your computer's browser needs access to standard character symbol sets to display Greek symbols for mathematical physics. If you don't have the symbol character sets installed, the density symbol ' ρ ' (*Rho*) will appear as 'r' and the ' π ' (*Pi*) symbol will as 'p', causing confusion with the use of 'r' for radius and 'p' for momentum in formulae. This problem exists with Mozilla Firefox 3, but not with Microsoft Explorer which displays Greek symbols.

About Me



Name: nige

<http://nige.wordpress.com/> <http://quantumfieldtheory.org/> <http://www.math.columbia.edu/~woit/wordpress/?p=273#comment-5322>. <http://www.math.columbia.edu/~woit/wordpress/?p=353&cpag=1#comment-8728>.
<http://www.math.columbia.edu/~woit/wordpress/?p=215#comment-4082>.

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From 1945-62, America tested 216 nuclear weapons in the atmosphere, totalling 154 megatons, with a mean yield of 713 kilotons

From 1949-62, Russia tested 214 nuclear weapons in the atmosphere, totalling 281 megatons, with a mean yield of 1.31 megatons

From 1952-8, Britain tested 21 nuclear weapons in the atmosphere, totalling 10.8 megatons, with a mean yield of 514 kilotons

From 1960-74, France tested 46 nuclear weapons in the atmosphere, totalling 11.4 megatons, with a mean yield of 248 kilotons

From 1964-80, China tested 23 nuclear weapons in the atmosphere, totalling 21.5 megatons, with a mean yield of 935 kilotons

In summary, from 1945-80, America, Russia, Britain, France and China tested 520 nuclear weapons in the atmosphere, totalling 478.7 megatons, with a mean yield of 921 kilotons

Mean yield of the 5,192 nuclear warheads and bombs in the deployed Russian nuclear stockpile as of January 2009: 0.317 Mt. Total yield: 1,646 Mt.

Mean yield of the 4,552 nuclear warheads and bombs in the deployed U.S. nuclear stockpile as of January 2007: 0.257 Mt. Total yield: 1,172 Mt.

For diffraction damage where damage areas scale as the two-thirds power of explosive yield, this stockpile's area damage potential can be compared to the 20,000,000 conventional bombs of 100 kg size (2 megatons of TNT equivalent total *energy*) dropped on Germany during World War II: (Total nuclear bomb blast diffraction damaged ground *area*)/(Total conventional blast diffraction damaged ground *area* to Germany during World War II) = $[4,552 \cdot (0.257 \text{ Mt})^{2/3}] / [20,000,000 \cdot (0.0000001 \text{ Mt})^{2/3}] = 1,840/431 = 4.3$. Thus, although the entire U.S. stockpile has a TNT *energy* equivalent to 586 times that of the 2 megatons of conventional bombs dropped on Germany in World War II, it is only capable of causing 4.3 times as much diffraction type damage area, because *any given amount of explosive energy is far more efficient when distributed over many small explosions than in a single large explosion! Large explosions are inefficient because they cause unintended collateral damage, wasting energy off the target area and injuring or damaging unintended targets!*

In a controlled sample of 36,500 survivors, 89 people got leukemia over a 40 year period, above the number in the unexposed control group. (Data: *Radiation Research*, volume 146, 1996, pages 1-27.) Over 40 years, in 36,500 survivors monitored, there were 176 leukemia deaths which is 89 more than the control (unexposed) group got naturally. There were 4,687 other cancer deaths, but that was merely 339 above the number in the control (unexposed) group, so this is statistically a much smaller rise than the leukemia result. Natural leukemia rates, which are very low in any case, were increased by 51% in the irradiated survivors, but other cancers were merely increased by just 7%. Adding all the cancers together, the total was 4,863 cancers (virtually all natural cancer, nothing whatsoever to do with radiation), which is just 428 more than the unexposed control group. Hence, the total increase over the natural cancer rate due to bomb exposure was only 9%, spread over a period of 40 years. There was no increase whatsoever in genetic malformations.

There should be a note here about how unnatural radioactive pollution is (not) in space: the earth's atmosphere is a radiation shield equivalent to being protected behind a layer of water 10 metres thick. This reduces the cosmic background radiation by a factor of 100 of what it would be without the earth's atmosphere. Away from the largely uninhabited poles, the Earth's magnetic field also protects us against charged cosmic radiations, which are deflected and end up spiralling around the magnetic field at high altitude, in the Van Allen trapped radiation belts. On the Moon, for example, there is no atmosphere or significant magnetic field so the natural background radiation exposure rate at solar minimum is 1 milliRoentgen per hour (about 10 microSieverts/hour) some 100 times that on the Earth (0.010 milliRoentgen per hour or about 0.10 microSieverts/hour). The Apollo astronauts visiting the Moon wore dosimeters and they received an average of 275 milliRoentgens (about 2.75 milliSieverts) of radiation (well over a year's exposure to natural background at sea level) in over just 19.5 days. It is a lot more than that during a solar flare, which is one of the concerns for astronauts to avoid (micrometeorites are another concern in a soft spacesuit).

The higher up you are above sea level, the less of the atmosphere there is between you and space, so the less shielding you have to protect you from the intense cosmic space radiations (emitted by thermonuclear reactors we call 'stars', as well as distant supernovae explosions). At sea level, the air above you constitutes a radiation shield of 10 tons per square metre or the equivalent of having a 10 metres thick water shield between you and outer space. As you go up a mountain or up in an aircraft, the amount of atmosphere between you and space decreases, thus radiation levels increase with altitude because there is less shielding. The normal background radiation exposure rate shoots up by a factor of 20, from 0.010 to 0.20 milliRoentgens per hour, when any airplane ascends from sea level to 36,000 feet cruising altitude. (The now obsolete British Concorde supersonic transport used to maintain radiation-monitoring equipment so that it could drop to lower-altitude flight routes if excessive cosmic radiation due to solar storms were detected.) Flight aircrew get more radiation exposure than many nuclear industry workers at nuclear power plants. Residents of the high altitude city of Denver get 100 milliRoentgens (about 1 milliSievert) more annual exposure than a resident of Washington, D.C., but the mainstream anti-radiation cranks don't campaign for the city to be shut to save kids radiation exposure, for mountain climbing to be banned, etc.!

1994 revised Introduction to Kearny's Nuclear War Survival Skills, by Dr Edward Teller, January 14, 1994:

'If defense is neglected these weapons of attack become effective. They become available and desirable in the eyes of an imperialist dictator, even if his means are limited. Weapons of mass destruction could become equalizers between nations big and small, highly developed and primitive, if defense is neglected. If defense is developed and if it is made available for general prevention of war, weapons of aggression will become less desirable. Thus defense makes war itself less probable. ... One psychological defense mechanism against danger is to forget about it. This attitude is as common as it is disastrous. It may turn a limited danger into a fatal difficulty.'

Advice of Robert Watson-Watt (Chief Scientist on the World War II British Radar Project, defending Britain against enemy attacks): 'Give them the third best to go on with, the second best comes too late, the best never comes.'

From Wikipedia (a source of groupthink): 'Groupthink is a type of thought exhibited by group members who try to minimize conflict and reach consensus without critically testing, analyzing, and evaluating ideas. Individual creativity, uniqueness, and independent thinking are lost in the pursuit of group cohesiveness, as are the advantages of reasonable balance in choice and thought that might normally be obtained by making decisions as a group. During groupthink, members of the group avoid promoting viewpoints outside the comfort zone of consensus thinking. A variety of motives for this may exist such as a desire to avoid being seen as foolish, or a desire to avoid embarrassing or angering other members of the group. Groupthink may cause groups to make hasty, irrational decisions, where individual doubts are set aside, for fear of upsetting the group's balance.'

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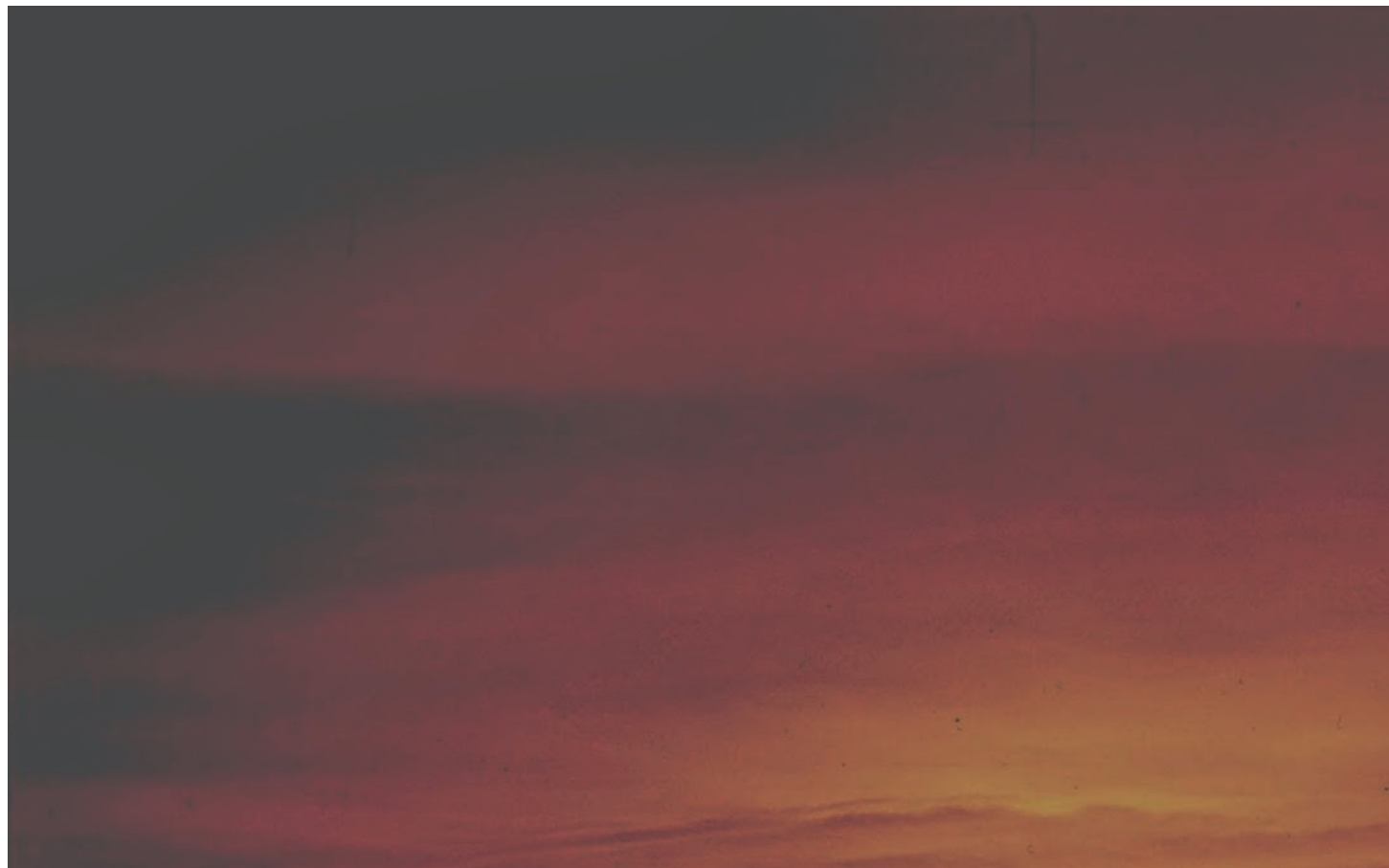
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◆ THAAD Goes Another ABM Test

◆ Alex Wellerstein's Restricted Data blog contains some interesting news (but beware of his uncritical use of unobstructed dry desert and nude skin thermal radiation and other effects predictions from the 1977 edition of Glasstone and Dolan; he deletes critically objective comments and pretends that honest criticisms of propaganda as being ignorant deception are rude as an excuse for ignoring the facts and refusing to engage in objective discussion of controversial aspects of this topic; basically if you pay homage and engage in groupthink bias you may be tolerated).

◆ Carey Sublette's Nuclear Weapon Archive (it contains errors from Chuck Hansen's compilation, and it is concentrated on bomb building, not on civil defence countermeasure evaluations done at nuclear tests; note that Chuck Hansen's books and CDs give a false quotation from Neil O' Hines's book *Proving Ground* on the effects of the 1952 Mike explosion on nearby Engebi Island, where Hines later in the book states that the native rats in fact *survived the intense close-in blast, heat and fallout under a few unches of soil, despite the initial ignorant belief that they could not have survived!!!*)

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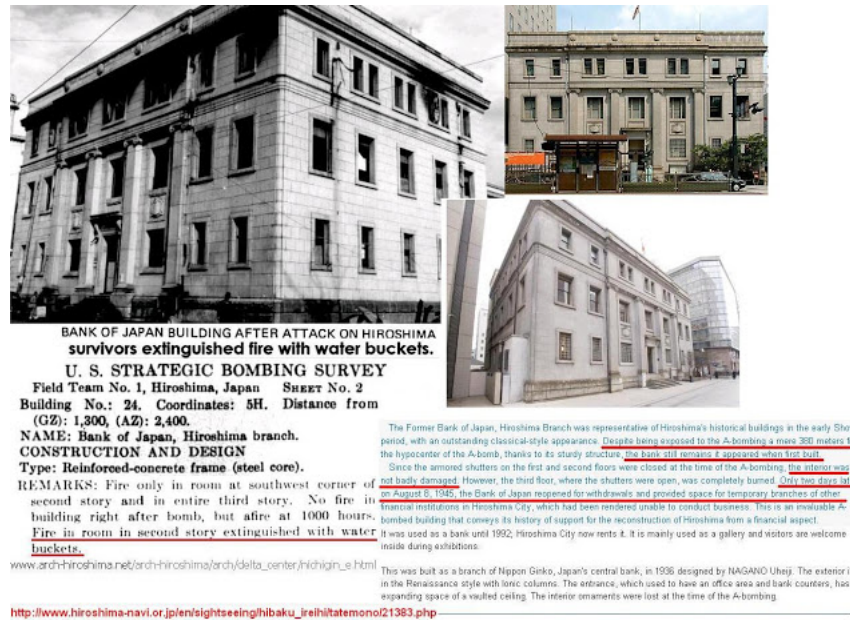
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The Bank of Japan, Hiroshima, survived 380 m from Ground Zero, within the firestorm area, when fires were extinguished by water buckets by its survivors, the majority of people in the building having survived. Secret US Strategic Bombing Survey report proves civil defense for modern concrete buildings is effective. The building was reopened as a bank on 8 August, merely two days after nuclear attack, and continued in use as a bank until 1992. It remains in Hiroshima. This beautifully designed and sturdy reinforced concrete building was designed in 1936 by Nagano Uheiji.